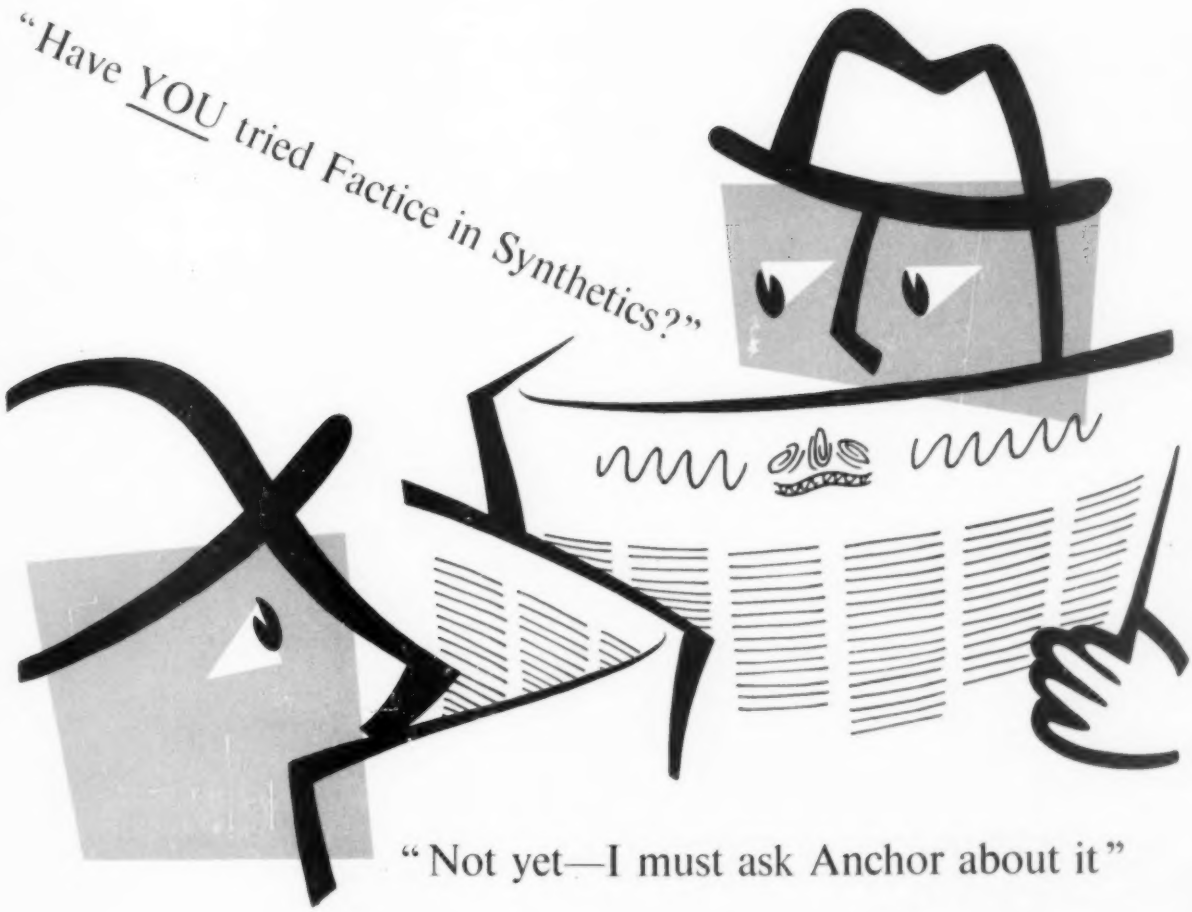
RUBBER and PLASTICS WEEKLY

VOLUME 141 NO. 27 DECEMBER 30 1961 ONE SHILLING



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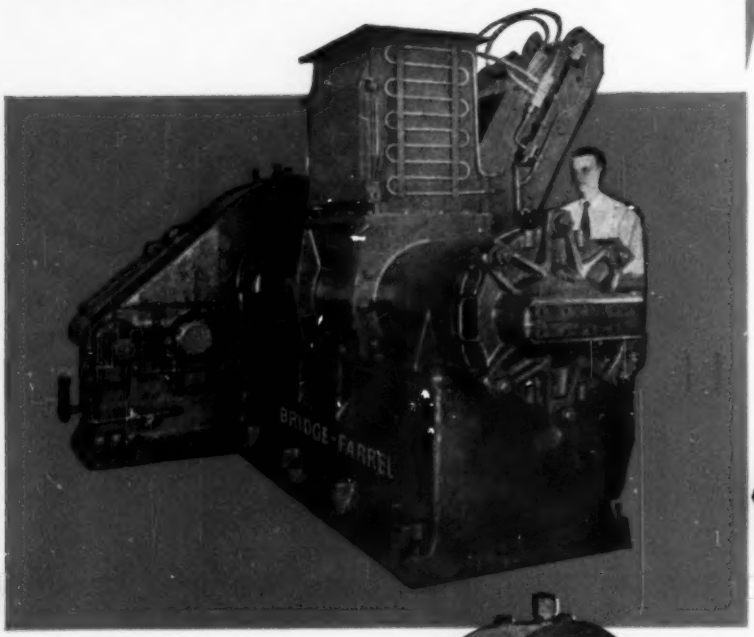

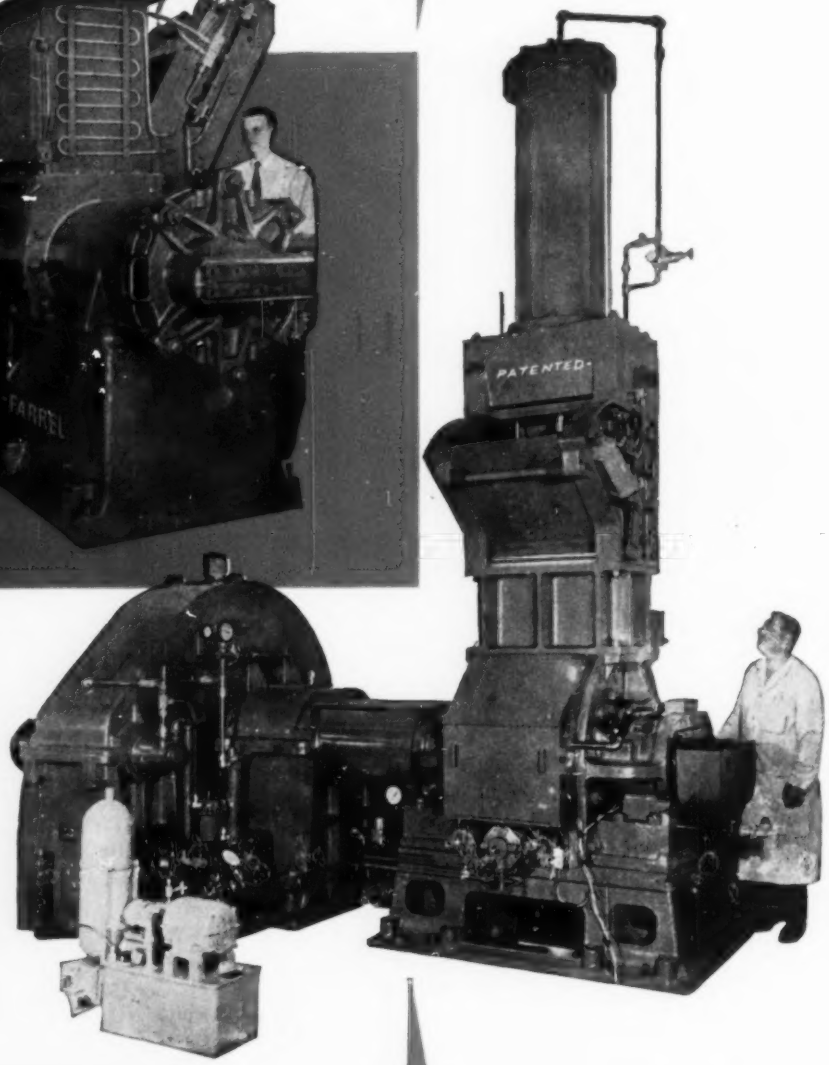

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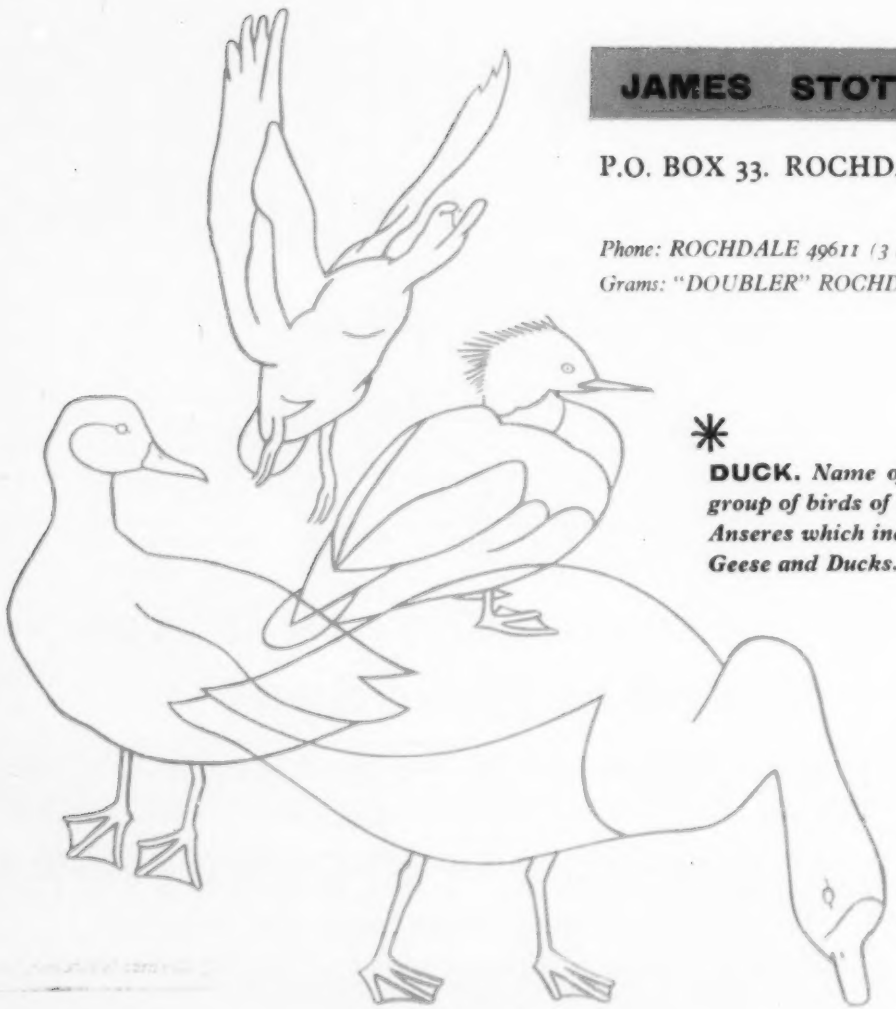

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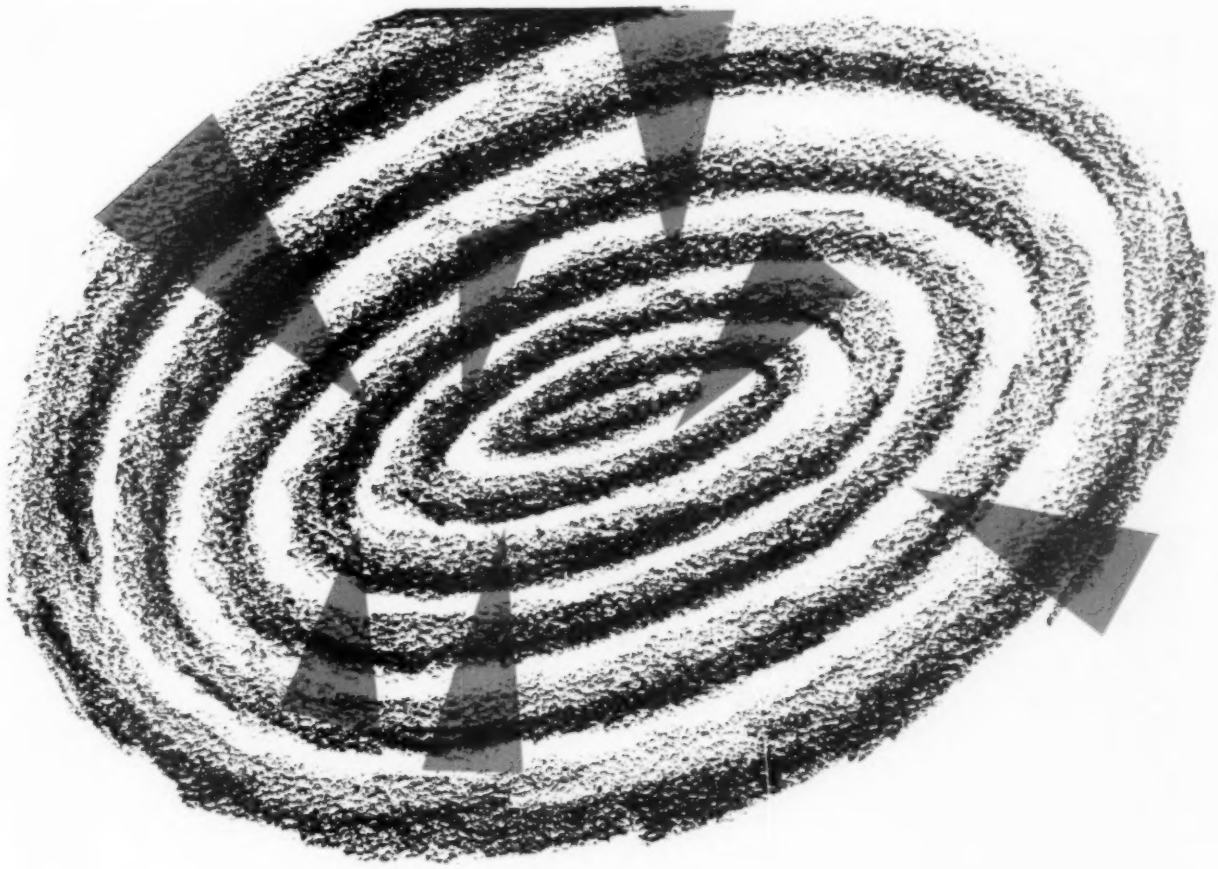

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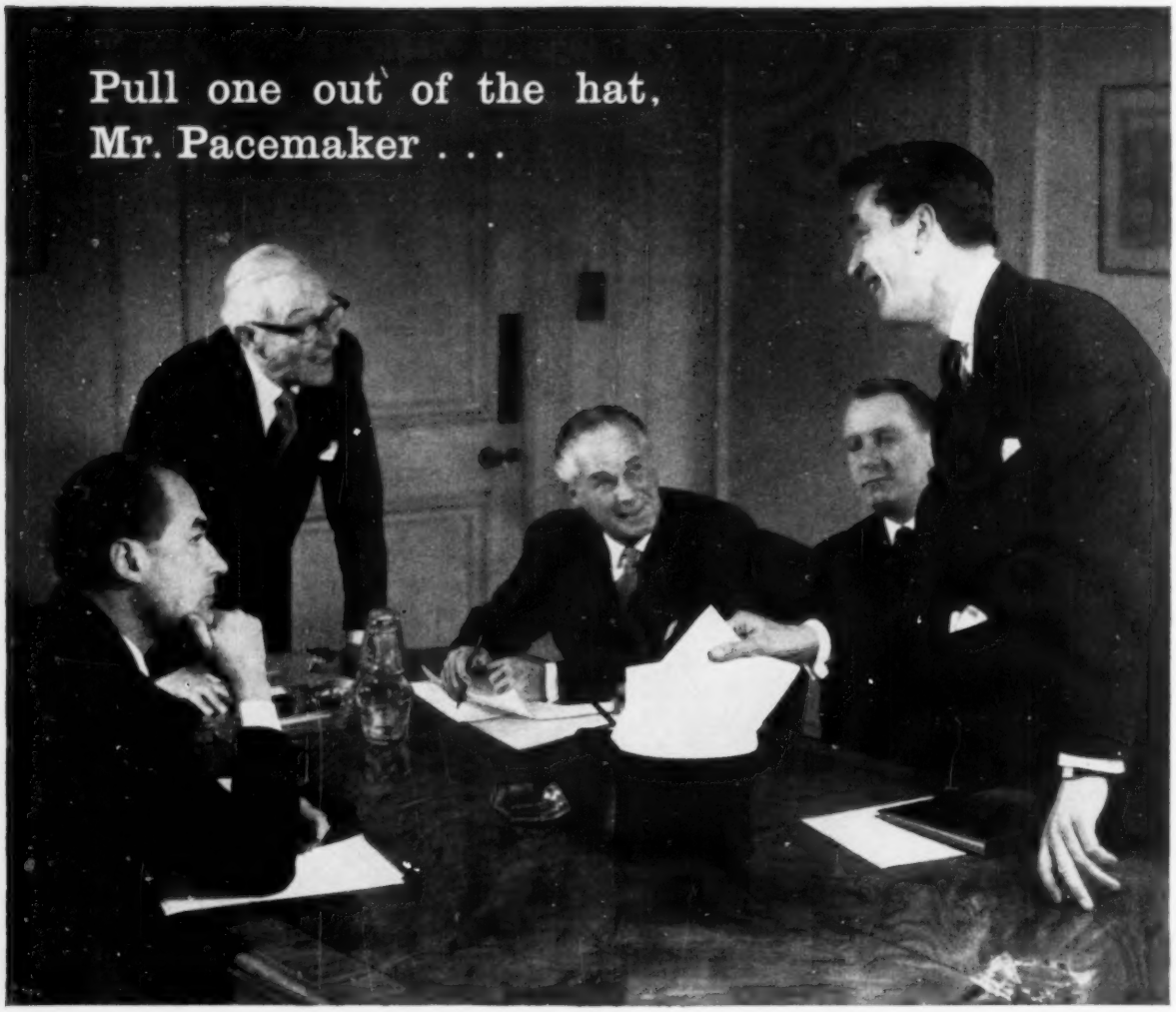

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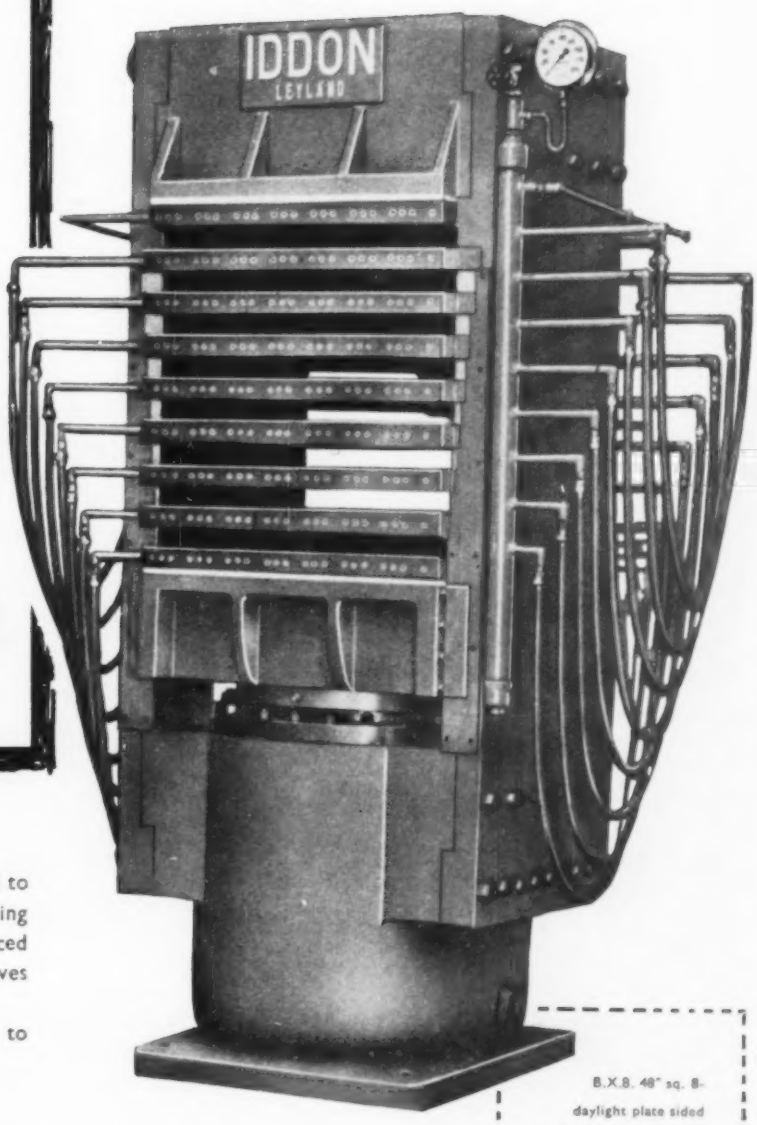

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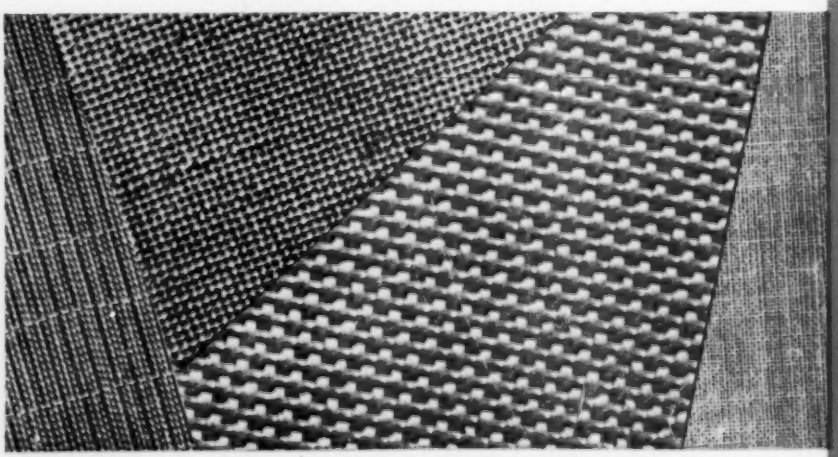

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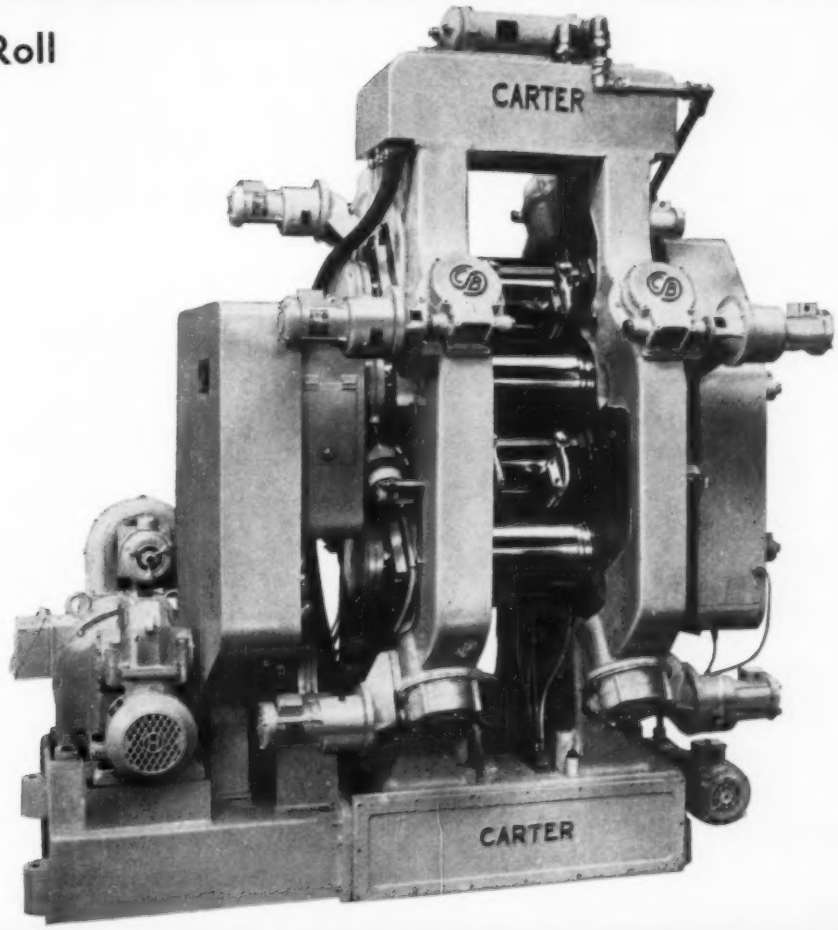

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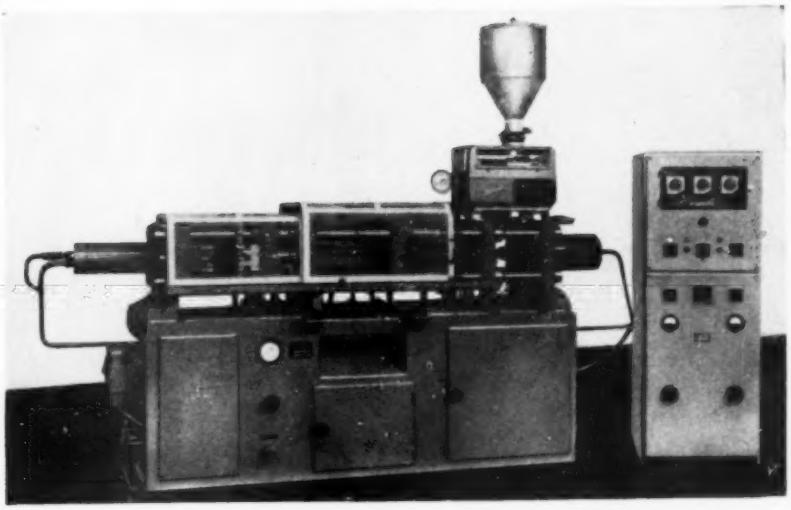

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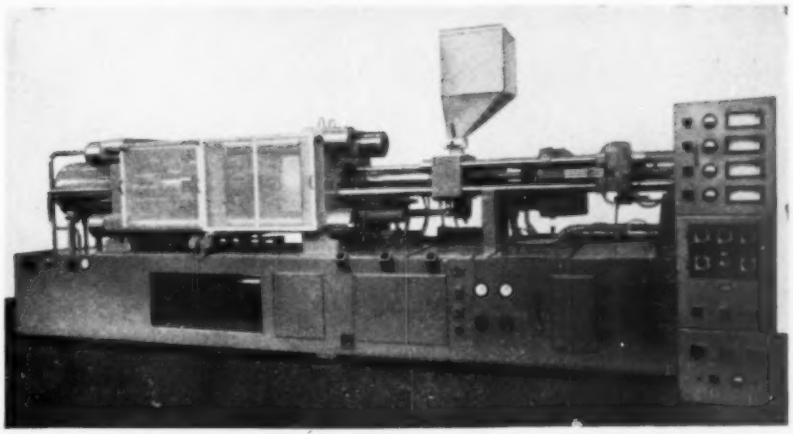

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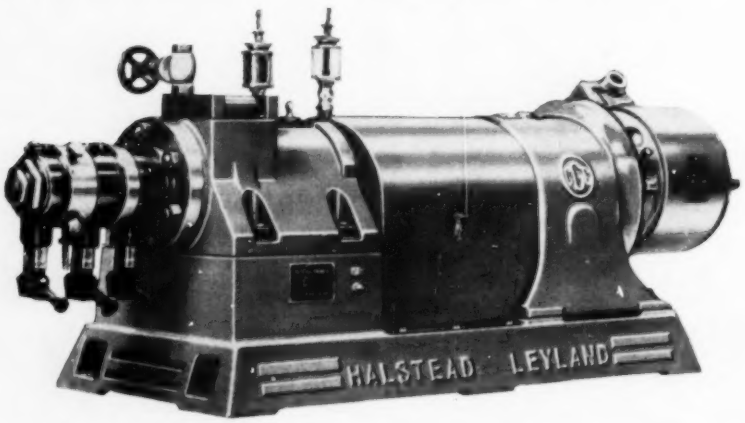

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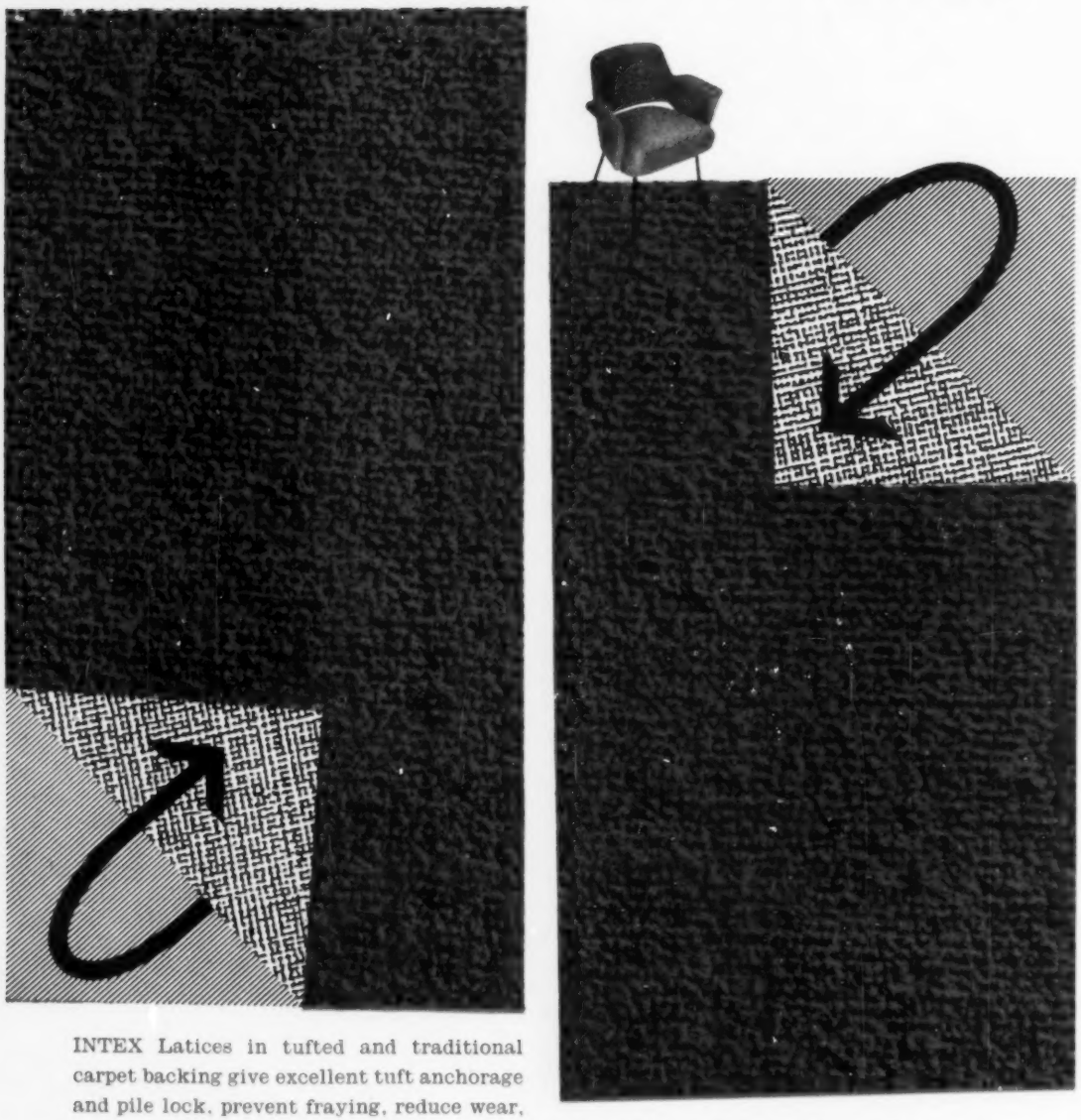

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RUBBER and PLASTICS WEEKLY

Formerly 'Rubber Journal and International Plastics'

Volume 141 IN ITS 78th YEAR No. 27

December 30 1961

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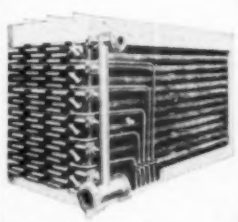

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NOTES of the WEEK

Rubber Mission

ONE of Malaya's New Year resolutions is to send a rubber mission to London and New York to deal with the quality of rubber shipments. For some time the Governments of Singapore and the Federation have been examining the function of the Malayan Rubber Export Board, which looks after the quality of the shipments, but the number of complaints has been rising so sharply in the last six months that it is felt that stronger action is required. Gon Teck Yeow, the MREB chairman, who is leading the eight-man mission, is reported to have said that there were weaknesses both in the shipping and receiving ends, in grading, sampling and arbitration.

The mission will meet the Rubber Trade Association and the Rubber Manufacturers Association in New York on January 22, and is expected to be in London on February 7. It is also expected to cover the International Rubber Quality Conference in New York in January. This is a welcome form of action and it is to be hoped that the mission will have some success in tackling this old and difficult problem.

Polymers for Icarus

IN 1400 BC the legendary Icarus flew too near to the sun, his wax wings melted, and he plunged into the sea. In AD 1961 men are still trying to make Icarus — man flying under his own power — into fact. But they have more than wax with which to do it. The glider in one man-powered flight project, being carried out by a team at Southampton University, is held together solely by synthetic resins. Frame and wing sections are bonded with epoxy resins and with polyvinyl acetate glues.

The Southampton team is one of several attempting to win the Henry Kremer prize of £5,000 for a man-powered flight at a minimum of 10ft. over a figure-of-eight course of one mile. The competition closes next February, and the latest reports, given in an article in this issue, suggest that a successful run may be made before the closing date. Describing the construction of the Southampton plane, the article shows that the flight of the first Icarus may literally be held together by polymers. The competition, incidentally, has another connexion with plastics. The man who initiated it, Henry Kremer, was until recently a director of Microcell Ltd.

A Firm of Members

THE first few months of the New Year will see industrial relations very much in the limelight. As we wrote on this page last week, Mr Lloyd's pay pause is causing considerable unrest in the chemical industry, particularly at petrochemical plants attached to refineries where wage increases have been granted by oil companies. At this point it is therefore perhaps salutary to record that a pioneer experiment in industrial relations in the polymer industry has just completed its tenth year of operation. In 1951 Ernest Bader, the founder of polyester and plasticizer manufacturers Scott Bader and Co. Ltd., created a charitable trust called the Scott Bader Commonwealth Ltd., which became the holding company. All employees over 21 and with over two years' service have the right to apply for membership, and most have done so. Each member can attend the annual meeting of Scott Bader and Co. Ltd., question the directors on their actions and vote on the distribution of the profits. Members also elect two directors. Up to 20% of the profits can be voted by members to be shared out as a bonus, but an equal percentage must be given to charity. The remainder is ploughed back into the business.

Some industrialists may think that this degree of relinquishment of control betrays a lack of realism. But the fact remains that what has been done for good industrial relations has turned out to be at least not bad commercial sense — for since 1951 the firm has expanded many times over and is still growing rapidly.

Decimals Delay

THE changeover to decimal coinage (which now seems virtually certain) will be a considerable — and costly — nuisance to most businessmen. But there is little doubt that we should make the change, which will bring very real benefits. What is a matter of concern is the time lag between the acceptance of the idea and its implementation. A point made in one survey* is that the longer the change is delayed the more costly it will be. This survey, urging the change, was made all of eighteen months ago. A fresh committee under Lord Halsbury and a preparation period indicates that we will not be buying and selling with decimals very much before 1965.

*'Should Britain Change' by the British Association for the Advancement of Science and the Association of British Chambers of Commerce.

NEWS *Briefs*

MALAYA BUDGETS FOR A LOWER EXPORT DUTY
US 1962 DIENE SALES 100,000 TONS? — FENNER
IN GERMANY—GOODYEAR $6M. LE HAVRE PLANT

●**United States** — Monsanto plans to expand the capacity of its vinyl acetate monomer plant at Texas City by 45m. lb. a year. The plant is scheduled for completion by the end of 1962 and will use acetylene made at the same site and acetic acid derived from ethylene made at Monsanto's Chocolate Bayon, Texas, plant.

●**Canada** — Butadiene extraction unit No. 2 recently went on stream at Polymer's Sarnia plant. Built by Fluor Corp. of Canada Ltd. at a cost of $1.8m., the new plant uses an acetonitrile extractive distillation system. It bears a strong resemblance to that employed in Polymer's butylene concentration unit in the separation of butylenes from a mixed butane-butylene stream. The new unit is the only one in North America utilizing acetonitrile in the production of butadiene.

●**Israel** — An agreement has been concluded between the Israel Petrochemical Enterprises in Haifa and the United Carbon Co. of Houston, Texas, under which the US firm will supply know-how and plant design and permit the use of its patent for a carbon black plant to be set up near the Haila oil refineries. The plant, which will start operation in mid-1963, will produce 9,000 metric tons of carbon black per year.

●**France** — Usually well-informed Stock Exchange quarters predict that a far-reaching merger resulting in one of Europe's most powerful motor industry groups will be announced shortly. The group would be formed by Citroen, Simca, Fiat and Panhard. It is rumoured to come into effect around March. The deal would include the sale of Citroen shares by Michelin — which holds a controlling interest to Citroen — to Fiat. Michelin is said to have drafted a big development programme in the tyre field and therefore wants to dispose of its Citroen shares to secure additional funds. However, since the rumours began, Fiat has issued a strong denial.

●**Egypt** — The United Arab Republic and the Cameroun Republic have signed a trade agreement in Cairo under which the United Arab Republic will import goods including rubber from the Cameroun Republic. During the first year of the agreement, trade between the two countries will not be less than 125,000 Egyptian pounds.

●**Malaya** — The Federation Government has budgeted for a lower estimated rubber export duty in 1962. The duty is put at $M86m. compared with an estimated $M118m. this year. The figure has been based on exports of 733,000 tons at an average price of M75 cents a lb.

●**United States** — Dow Chemical has revised the price of its polystyrene to 18 cents a lb. Two months ago it lifted the price to 19 cents a lb.

●**West Germany** — J. H. Fenner and Co. (Overseas), the Hull firm of power transmission engines, and Hochreuter and Baum, have formed a marketing company in West Germany. The new company is called Fenner and Hochreuter GmbH, and will be based in Ansbach. Fenner holds the major interest.

●**United States** — In line with an expected increase in the general economy, sales of the US rubber industry should gain 6½% in 1962, George R. Vila, president of the United States Rubber Co., said in a year-end statement. This would bring up the industry's total sales to $6,600m., compared with this year's estimated total of $6,200m. The US will use about 1,625,000 long tons of natural and synthetic rubber next year, an increase of 115,000 long tons, he said. Domestic consumption of the stereo-regular synthetic rubbers will increase sharply to 100,000 tons next year.

●**France** — J. A. Goodson, chairman of the French Goodyear Co., has announced in Paris that Goodyear International has approved plans to build the company's synthetic rubber plant in the Le Havre area. This will be situated near the refinery complex operated by CIE Française de Raffinage, France's biggest oil refining company. The type and amount of rubber to be produced and the production target were not disclosed, although an investment of $6m. is foreseen. In addition to synthetic rubber, resins and latex for the tyre industry, production could cover plastics, paints, dyes, paper and other chemical products when operations start early in 1964. Output would be earmarked for the whole European market and not only for France.

'Me, white man boss!' — 569

Du Pont Plans for Lycra

CANADIAN PLANT FOR POLYURETHANE FIBRE

A PLANT to produce a new elastic-type yarn, known as Lycra spandex fibre, will be constructed at Maitland, Ontario, by Du Pont of Canada Ltd. Work on the multi-million dollar plant will begin very shortly. It is expected to be in production by early 1963.

The plant will have capacity in excess of current Canadian requirements and the company said that it will embark on an active programme to develop export markets for the fibre.

One of the latest developments in man-made fibres — the first full-scale plant in USA will precede the Canadian plant by less than a year — the yarn will find initial uses in elastic fabrics of various kinds, especially in foundation garments, swim suits and hosiery, a company announcement says. It is expected to find eventual applications also in home furnishings, military and industrial uses and sporting goods as well as in many kinds of clothing.

Du Pont of Canada says it expects the 'unique properties of the fibre' to establish a new high standard of performance for garments in which it is used. In the foundation garment industry, for example, its introduction is seen to be as important as the advent of nylon was in the hosiery industry. Looking further afield, Lycra is foreseen as offering a new dimension to fabric design and construction, making possible new shapes in clothing that could revolutionize the garment industry.

Chemically, Lycra is a long-chain synthetic polymer comprised of at least 85% polyurethane, the company says. It has good initial whiteness and a ready acceptance of dyes. It is smooth textured and strong and can be readily processed on textile equipment.

Selling for Blends

Initial production will be in filament form but staple fibre of Lycra —at present in the early development stage — will be considered for future production and selling for use in blends with other man-made fibres.

The seventh man-made fibre to be developed by E. I. du Pont de Nemours and Co. of the US, the first introduced since 1953, and the third to be made by Du Pont of Canada, Lycra requires more complex chemical reactions than any other fibre and represents a considerable technical achievement for polymer scientists. Years of research and development plus an expenditure of more than $10m. went into the efforts to bring it from the test tube to the point where a decision was made to proceed with commercial production.

Both the US and Canadian textile industries are reported to rate the new fibre highly. The yarn has been available in the US since the beginning of 1960 and small quantities have been imported to Canada for market development.

The new plan of Du Pont of Canada's which brings to five the number of plants on the company's 11,500 acre Maitland, Ontario, site, will be located adjacent to the existing Orlon acrylic fibre plant.

Aircraft Starter Hose

William Warne and Co. Ltd. has introduced a new aircraft starter hose; it will be used with ground power units for starting the engines of jet aircraft.

Features of the hose are its very light weight and excellent flexibility. Details of construction include a lining of heat resistant compound, reinforced with impregnated heat treated Terylene. This construction enables the hose to withstand a temperature of 200°C. at 40psi working pressure.

To protect the hose from scuffing damage during use on runways or starting aprons, it has a removable scuffing jacket of neoprene impregnated Terylene, to the outside of which is moulded a spiral scuffing strip of abrasion resistant rubber. This means that wearing of the jacket does not involve replacement of the entire hose.

Malaya Wants Rubber Buffer Stock

TAN Siew Sin, Finance Minister, has told the Malayan Parliament in Kuala Lumpur, of the need for the creation of an international rubber buffer stock.

Speaking during the introduction of the Budget for next year, Mr Tan said the buffer stock could come out of USA's strategic stockpile and its size could be something in the region of 250,000 tons.

International Control

Transfer of this amount of rubber from a national stockpile to international control would ensure that its operation would be in the interests of both producers and consumers, he said.

The cost would be considerable and while it would be reasonable to expect both consumers and producers to bear their fair share of the cost of the operation, he suggested that producers like Malaya should be allowed to utilize their drawing rights on the International Monetary Fund for this purpose.

Mr Tan added that without the assurance of stable and fair commodity prices 'even good Government and sound economic policies may be found to be inadequate'.

The Budget for next year provides for a deficit of about $92m. (Malayan). The estimated income is about $938m. and expenditure $1,030m.

The estimated income for this year is a record $1,071m.

BICC-Burndy Move

Formerly located at Prescot, Lancs., BICC-Burndy Ltd., the electrical connector specialists, has now become established in larger premises on the Parr Industrial Estate at St. Helen's.

Natural Experts in Washington

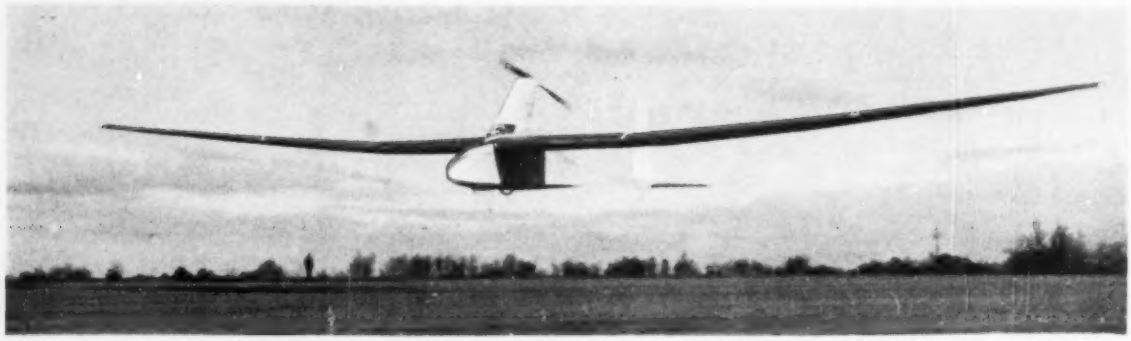
Experts from eight Asian and African nations have held a two-day consultation with US officials in Washington aimed at reaching a 'better international understanding' on the world rubber trade.

Informed sources said that the main reason for the meeting was to discuss the US decision last November to revise its method of selling crude natural rubber from the national stockpile.

The revision, which allowed rubber from the stockpile to be sold for less than 30 cents a lb. for the first time, has been strongly criticized by a number of rubber producing nations who have claimed that it would damage their economies by reducing world prices.

The State Department said that the meeting would allow representatives of major rubber producing countries to examine with USA 'the problems or difficulties confronting them with respect to rubber and, if possible, to arrive at a better international understanding'.

Countries taking part in the meeting were Malaya, Indonesia, Thailand, Ceylon, South Vietnam, Cambodia, Liberia and Nigeria.



The Southampton University plane: engine one man power

Man-powered Flight

SYNTHETIC RESIN GLUES USED IN SOUTHAMPTON UNIVERSITY ATTEMPT

EVER since the legendary Icarus flew too near to the sun, melting his wax wings, man has had the urge to fly alone under his own power. Some of the latest attempts, fostered by the Henry Kremer competition, use synthetics far removed from Icarus's wax — synthetics such as polyvinyl acetate glues and epoxy resins.

Henry Kremer, for some years a director of Microcell, a member of the BTR group, offered a prize of £5,000 for the first successful controlled flight of a man-powered aircraft. The competition course consists of flying over a figure of eight encircling two posts a half-mile apart.

In the last two months competition has become much keener. Two of the main groups taking part in the project, the University of Southampton and the Hatfield Man-Powered Aircraft Club at de Havilland's, have announced successful flights, although neither has yet completed the full course. The Southampton group claims to have flown a distance of about 50yd. climbing to about 6ft. and the Hatfield Club claims that one of its aircraft flew a distance of one quarter of a mile at a height of 6ft., both flights occurring in November 1961.

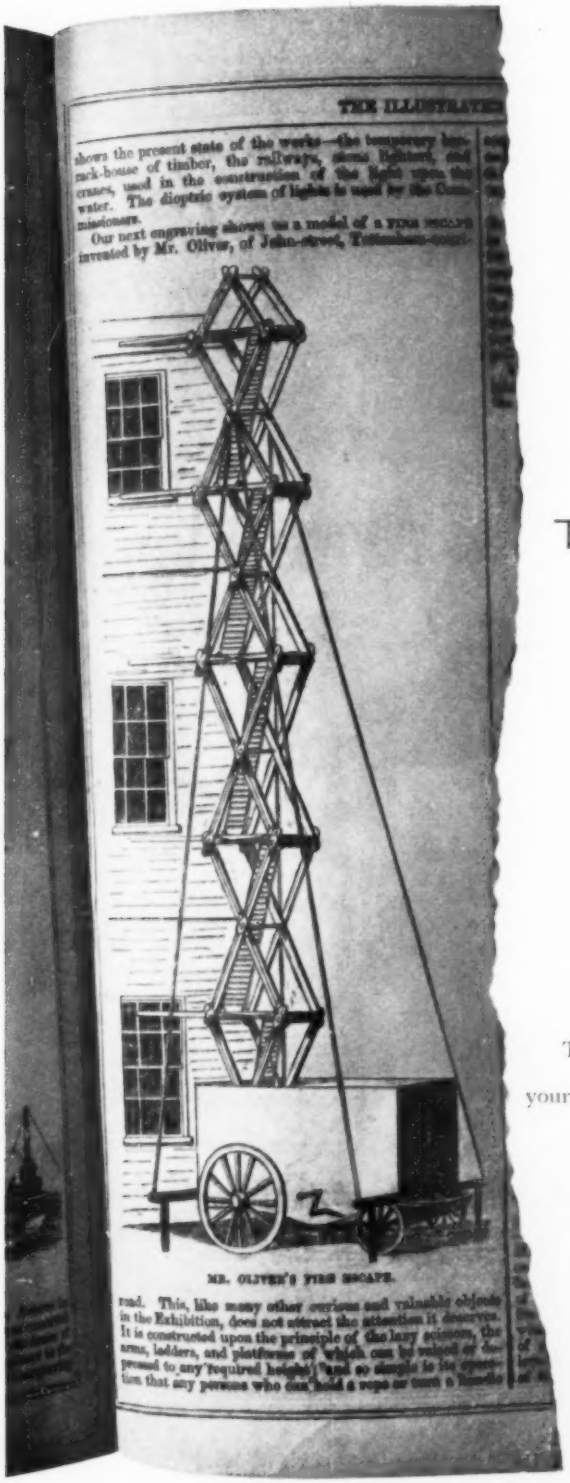
On one project, except for detachable parts which were bolted on, the structure was held together entirely with synthetic resin glue. Three types of glue have been used; Cascamite 'one shot' resin glue for all wood-to-wood glueing and Cascorez 1103 polyvinyl acetate glue for glueing the nylon to the frame, manufactured by Leicester, Lovell and Co. Ltd., Southampton, and Araldite epoxy resin glue for glueing light alloy to wood, manufactured by Ciba (ARL) Ltd., Cambridge.

The whole frame of the Southampton aircraft is covered with nylon fabric bonded with Cascorez polyvinyl acetate glue. The nylon covers an area of about 700sq. ft. and weighs 6¼lb.

The rules decree no use of lighter-than-air gases; power and control must be by the man, or men, in the machine all the way: no storing of energy for take-off or flight (no cables wound up before the start); no jettisoning anything after the starting signal and only one ground-crew allowed (to stabilize the machine at wing-tip during take-off). The competition will remain open, unless won, until February 1962. If it has not been won by then, the rules may be relaxed here and there and the period extended.

In February of this year, three members of the Aeronautical Department of the University of Southampton (A. Lassiere, Miss A. J. Marsden and D. Williams) entered the competition. They completed their initial design of a single seat, cantilever monoplane, capable of being driven by a high position pusher propeller powered by the cycling action of the pilot. Their aircraft weighs about 130lb.

The 25ft. long fuselage with a moment arm to the tailplane of 20ft. is of basic box structure, the sides of which were drawn to full scale on the floor, constructed independently and then joined together. The sides are of laminated spruce construction glued with Cascamite 'one shot' synthetic resin glue which was also used to bond in the balsa packing and for fixing the cross bracing between the longeron laminates, the use of which


THE ILLUSTRATED
shows the present state of the works—the temporary brick-house of timber, the railways, steam lighter, and cranes, used in the construction of the light upon the water. The dioptric system of lights is used by the Commissioners.
Our next engraving shows us a model of a FIRE ESCAPE invented by Mr. Oliver, of John-street, Tottenham-court-
MR. OLIVER'S FIRE ESCAPE.
road. This, like many other curious and valuable objects in the Exhibition, does not attract the attention it deserves. It is constructed upon the principle of the lazy scissors, the arms, ladders, and platforms of which can be raised or lowered to any required height, and so simple is its construction that any persons who can hold a rope or turn a handle

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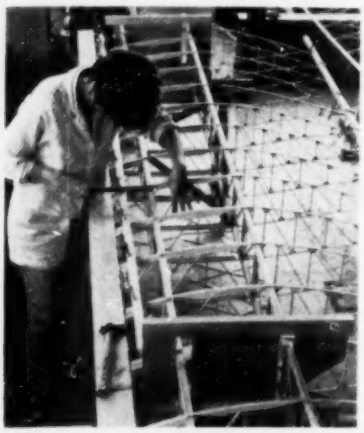
obviated the necessity for gussets — an important feature of the design.

The wing, which spans 80ft., has an area of 300 sq. ft., and the girder ribs and booms are made from laminated spruce. Araldite epoxy resin glue was used to fasten the light



The wing of the Southampton aircraft spans 80ft., has an area of 300 sq. ft. and is held together with synthetic resin glue

alloy wing joint fittings to the spar booms. This method of fixing the light alloy was selected after tests had shown that the alloy would fail before either the glued joint or the laminated wood.

The whole frame is covered with balsa wood sheeting and doped lightweight but extremely strong nylon fixed with Cascorez polyvinyl acetate glue. The nylon covers an area of about 700 sq. ft. and its total weight is only 6¼lb.

The under-carriage has a small front wheel and a driven back wheel. The drive is from the crank to the back wheel and from the back wheel to the propeller. The pusher propeller is mounted on a pylon above the trailing edge of the wing to disturb the flow over it as little as possible. It has two blades with a diameter of 7ft. The pylon contains the pilot's head as well as the drive and mounting for the propeller. Longitudinal control is obtained by movement of the tailplane which is hinged at its quarter-chord point. For lateral control there are conventional ailerons and a flying fin.

Choice of Layout

The high wing layout was preferred to obtain more ground clearance. The shape and size of the fuselage was determined by the pilot's method of doing mechanical work.

As the arms and hands have to be free for control action, a cycling system has been adopted. The disadvantages of the usual cycling position are the necessity of a large frontal and side area, and poor forward vision. By cycling while sitting back at approximately 15°, a small frontal area and excellent field of view are obtained.

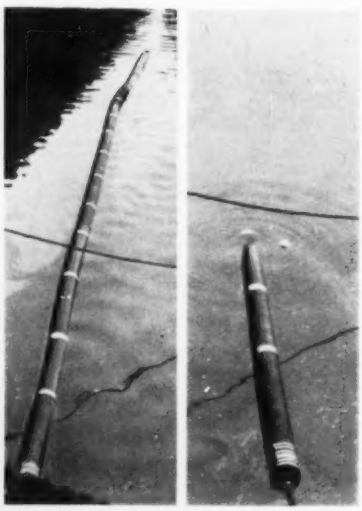
Racing cyclists performed tests on an ergometer and the position was found to be both comfortable and practicable. An added advantage of the sitting position is that the back rest provides all the required reaction for the legs; the arms are entirely relaxed, even in periods of maximum effort. Power transmission is obtained with chains — chosen because of their high efficiency. The thrust horse power of a propeller at low speeds is very small so that at take off propeller thrust alone would have been insufficient and, for this reason, both the back wheel and the propeller are driven. The back wheel can free-wheel to avoid an impulsive force on the pilot's legs at touchdown.

Separate from the Kremer prize-money, the Man-Powered Aircraft Group of the Royal Aeronautical Society has collected £5,000 to assist groups or individuals in developing designs that the committee consider promising. Besides the University of Southampton group and the Hatfield Man-Powered Aircraft Club at de Havilland's, there are four other projects which are competing. They include a group at Aviation Traders, Southend, a couple of members of the Apprentices' Association at Vickers-Armstrongs (Aircraft) in Weybridge, P. M. Savage, who is doing post-graduate work at Imperial College, London, and a Mr Hodgess-Roper, who works in the design section of the Hunting Percival Aircraft Co.

£30,000 Amazon Order

THE first lengths of the new Amazon float and sink hose, made in Edinburgh by the North British Rubber Co., are to be shipped shortly to Italy for use by the Purfina Italiana Petroleum Co. This project, in hose value alone, is said to be worth £30,000.

Amazon float and sink hose feeds oils to or from super tankers to shore depots. The tankers are secured by a terminal buoy system, to the base of which is attached the hose, comprising an air hose below which is attached the oil pipe, which floats when in use and submerges when not in use so as not to interfere with shipping.



The Amazon float and sink air hose below which is attached a 12-in. heavy-duty high-flow rate oil suction and discharge hose. On right is the hose being submerged so as not to interfere with shipping

The North British Rubber Co. has achieved this development in collaboration with its export associates, US Rubber International (GB) Ltd.

In the study of conditions and research work necessary they have worked in conjunction with A. B. International Marine and Oil Development Corp., a Swedish firm, who are designers of the Imodco buoy for offshore tanker terminal.

IRI Golf

MIDLAND SECTION RE-FORMED

AT a meeting held at Walmley Golf Club recently, it was decided to re-form the Midland Section of the IRI Golfing Society, a section that was active in the 'twenties and 'thirties.

L. V. Jennings was elected captain, C. H. Leigh-Dugmore hon. secretary, and F. Moore, P. D. Smalley and R. G. Weller committee members.

The section proposes to hold three evening meetings in 1962 in May, June and July. The first of these will be the qualifying round for the Wallwork Cup.

Anyone in the Birmingham, Burton or Leicester areas who wishes to join should write to the secretary, C. H. Leigh-Dugmore, Dunlop Research Centre, Fort Dunlop, Birmingham 24. (Telephone Erdington 2121, ext. 2216.)

500 Control Panels

An order for 500 control panels, valued at £40,000, has been placed with Brookhirst Igranic, a company in the Metal Industries Group, by British Insulated Callender's Cables.

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VIEWS and REVIEWS

'GALLIMAUFRY' is a useful word. It means a medley, a hotchpotch, a hash of odds and ends especially of left-overs too good to be thrown away. 'Views and Reviews' for the last week of the year is almost inevitably a gallimaufry.

European Technical Digest

So too is a publication, sponsored in the UK by the DSIR (14-18 Cornwall Terrace, London, N.W.1) and published by the Organization for Economic Co-operation and Development at £3 10s. per annum for 12 monthly issues. Here are some items of possible interest to our industry in the November 1961 issue.

ABS rubbers in Italy.
Nash and Thompson's Differential Polarographic Analyser.
Effect of mica on exterior paints.
Prevention of spontaneous combustion in coal heaps.
Urethane roller coating.
RAPRA's lime-oil mixture as a dessicant to prevent porosity in rubber.
Self-locking, nylon-ringed nuts.
Shrinkage of extruded rubber tube.
Resin-fibre glass tanks for the transport of liquids.
Spring-suspension of hand-operated tools.
Masking offensive odours.
Plastics rosette as a pipe surround.
Plastics, vertical delineators instead of white lines on Italian motorways.

A Readers' Enquiry Service provides, on request, either the full original paper or further information. The publication is called the *European Technical Digest*.

Reinforcing Latex Rubber

Last week, I suggested that the end of latex foam rubber was in sight, vanquished by urethane foam rubber, unless — which I thought unlikely — someone found a method of reinforcing latex rubber without substantially degrading other properties.

It is only fair that I should point out that undoubted reinforcing effects of black in unmasticated latex rubber have been reported, and most recently by Alphonse and Gusti Lamm in their contribution to the DKG conference last year, now published in *Kautschuk und Gummi*, Vol. 14, No. 11, November 1961, pp. 334-8 WT.

Irradiation Effects

In introducing their own researches, the Lamms survey the previous work (especially that of Dogadkin and his co-workers) which led them to conceive the theory that chemical forces, particularly free-radical systems, would produce reinforcing effects in unmasticated latex rubber mixes and vulcanizates, and that such conditions could, they expected, be brought about by irradiation.

They were proved right. They began by showing that gamma radiation did not coagulate centrifuged (60%) natural latex but produced in the dried film a small increase in tear resistance. This they followed with experiments on mixes of latex and HAF black, irradiated before and after mixing.

Marked improvements in tear strength were obtained, the best being when the latex and the black dispersion were irradiated separately and then mixed.

Comparatively small dosages of radiation were required — perhaps about 1.5×10^7r — and the optimum loading of the black was found to be just below 20%. Obviously, until the mechanism is more clearly understood, any given compound must be tested empirically, though the Lamms do make notable contributions to the theory by their work on radical- and oxygen-acceptors.

What is Reinforcement?

In this paper, the degree of reinforcement is largely judged by tear resistance. This may be the best measuring stick for latex compounds, as abrasion resistance is for tread compounds and extension modulus for neither, and I may be wrong in using the term 'reinforcement' for increasing the 'hardness' of latex foam rubber. It may be that, for foam rubber, what is wanted is simply increased stiffness.

Furthermore, I am not belittling the work of the Lamms, which will have, I have no doubt, practical as well as theoretical value, if I say that, from a commercial point of view, it would be most useful to know to what degree and at what cost irradiation of black and latex will increase the load-carrying capacity of latex foam rubber, especially in the presence of an antioxidant, without serious reduction in other physical properties and while substantially retaining them during ageing.

Until that question is answered, I still feel free to hold that, without a large reduction in the price of latex itself, foam rubber will lose the battle to polyether urethane foams, which are only at the beginning of their development cycle.

Resins Help Rubbers

Another contribution of more than passing interest to the DKG symposium was that on the vulcanization of rubbers by means of resins by C. Thelamon, now published in full in *Kautschuk und Gummi*, Vol. 14, No. 11, November 1961, pp. WT 347-358.

The chemistry of the phenolformaldehyde reactions with rubber is first outlined, with special reference to the theory of the formation of chroman rings. Then the author's work is described, on vulcanizing by means of dimethyl phenolformaldehyde and of alkyl-bromo-methyl phenolformaldehyde.

Vulcanizates containing black and silica are compared, as to physical properties and spectra, with sulphur- and dicumyl peroxide-vulcanizates.

While the resin-vulcanizates showed low permanent set, their ageing properties, at least with natural rubber, were not very good.

COMMENT ON SCIENTIFIC AND INDUSTRIAL MATTERS

by **F. C. JENNINGS**

A Commercial Fable

William Parkland — he was variously known as Bill, W.P., Mr Parkland, Parky, and The Old Man — ran his own business in the East End of London. He had no research or development department. For that matter, he had no sales, or works, or accounting, or engineering departments. He was them all.

He worked hard for long hours, thought brightly, spent sparingly, and enjoyed life. Nobody could accuse him of being 'technical', but he knew more about the chemistry, physics, and biology of 'his' product — which was Parkland's Plastic Powder Puff — than anyone else in the world. He knew how to produce it at a figure his selling price would cover and how to sell it at a price which was just enough more than it cost him to produce.

He was content to go on, doing nicely, just as he was. He had no ambition to build an industrial empire.

Act II opens in the boardroom of Max Parameter (UK) Ltd. where a serious view was taken of the inroads being made into the cosmetic business by that colossus of the business world: Vinyl, Thene and Epoxy Ltd. Parameters, it was felt, needed a new gimmick. If it was in the plastics field, so much the better — an expanding industry to get into.

Enter the Technologist

Act III depicts Bill Parkland, now the MD of Parameters Plastic Puffs Ltd., in discussion with Dr Egregious Quick, the Research Director of Parameters' main company. Dr Quick has a proposition arising from one of those serendipital discoveries which, as many believe, are the basis and method of all modern science and technical progress.

It is this: if one of the ingredients of the powder puff mix (actually, french chalk) be only very roughly mixed into the polyester matrix so that pockets of dry powder occur, like currants in a cake, there will be produced a powder puff which has its own powder, built in, so to speak, but at once available for repairing the ravaged beauty of the female face.

It would be too highly technical if I reproduced the details of the discussion but it will suffice to record that Bill Parkland offered several good reasons against the scheme without disclosing that his main objection was to taking on more work and worry without any good return. Ultimately, he was retired by Parameters and lived a blameless, happy life thereafter in a service flat on the South Coast of England.

The new powderful puff also succeeded and put Parameters back on their feet and in a fighting posture for another 12 months.

There is no moral to this fable, because it is substantially true. It is a brief account of progress, of profit and loss.

The Terror of Toys

It is a pity that a recent publication of the British Standards Institution did not appear a few weeks earlier, as it would have enabled me to give my readers a few tips on choosing some of their Christmas presents!

BS 3443 : 1961 is a *code of safety requirements for children's toys and playthings* and is perhaps an indication that the day is not too far distant when small nephews or nieces will reject their Christmas toys on the grounds that they don't bear the kite mark!

'The vast majority of toys', says the foreword of the code, 'are in themselves perfectly innocuous. Provided they are used in the way envisaged no harm can result. Unfortunately children may be given toys unsuited to their ages and they may devise totally unforeseen ways of using them'.

It is with this idea in mind that the recommendations in the code are made and particular emphasis is placed on the risk of children swallowing toys such as those found in Christmas crackers or distributed as premium gifts with other goods.

The reference to plastics and rubbers are very few and quite unqualified.

'Toys and playthings should not include in their composition any dyes, plasticizers and other ingredients known to be injurious to persons with whom they may come in contact'.

'Toys and playthings should not be made in any part from celluloid or materials of similar flammable nature'.

'Where plastics are used that can break or leave sharp edges, the thickness shall be sufficient to withstand reasonable usage. Where thin sections are essential the materials used should be inherently tough. Plastics toys shall be properly finished so that no part of the toy shall be able to damage a child's skin when reasonably used'.

'Where a flexible bag (above a certain size) is used for packaging it shall be printed with a suitable warning label saying that it is not a toy, that it should be kept away from children to avoid risk of suffocation and that it shall not be used in cribs, beds, prams or play-pens'.

All pretty obvious you may say — but nevertheless a step in the right direction.

Look at Us

The end of the year is a favourite time for self-review but I have space for only a short comment on RUBBER AND PLASTICS WEEKLY. As I see it, because it is the only *weekly* journal serving the polymer industry in the whole world, it is primarily a newspaper.

It would seem to follow that its greatest value is to him who gets it early; it may be a professional advantage to be first with the news, certainly technical news is as much a part of a polymerist's equipment as a pen and more than a slide rule.

RPW, however, is more than a newspaper; it is a technical, commercial, engineering, and production record and commentary. For this reason, it is read all over the world. It interprets the world and the British polymer industry to each other.

There is more to a technologist's work than technology; a works' manager does more than manage a works; a director who did nothing but direct other people would never get there himself. This journal tries to give balance, to keep the technologist's feet on the ground and the manager's eyes on the stars.

The industry is going to need these things even more next year than it has this.

CHARLES JENNINGS

MEN and MATTERS

A Review of People and Events

by Peter Richards

HAVING just finished browsing through a little book, recently published, called *Writing Guide for Chemists*, I hardly dare put pen to paper. It seems, judging from all the common errors pointed out, that I am almost certain to fall into a trap sooner or later — in fact I *think* there is an ambiguous grammatical relationship in my first sentence.

Much has been said and written over the past few years about the low standard of technical writing and a number of books on the subject have been published. Two remarks in the foreword of this one are perhaps worth quoting.

'In technical writing, a manual of ironclad do's and don'ts is inherently impossible: every research director or professor has his own ideas on what constitutes good writing and every scientific journal and industrial or government laboratory has its own special dicta', and '*A Dictionary of Modern English Usage* by H. W. Fowler, provided a vigorous opinion on many points'.

In short, actual grammatical or spelling errors apart, there is some diversion of opinion as to what constitutes good English. There are nevertheless many stumbling blocks common to most technical writing and this book is intended as a practical guide, helping the writer to avoid chronic faults, steering him round pitfalls and offering him advice and information. It came as a shock to see how many of the chronic faults to be found in the pages of this little book are the sort of things which many of us would read without turning a hair.

200 Years at David Moseley

A unique occasion in the history of David Moseley and Sons Ltd. arose last week.

Four members of the staff at the company's Chapelfield Works retired after completing between them 200 years' service.

The oldest, Arthur Jackson, who at 67 has completed 54 years' service, started as an office boy in 1907 and has been manager of the belting, roller covering and hand made mechanical departments for 30 years.

George Deane, who will be 66 next February, also started as an office boy, in 1910, and has been the manager of the hose department for the last 22 years of his almost 52 years' service.

The same period of service has been clocked up by George Flint, who, for the past 16 years has been at the Chapelfield Works as manager of the Northern sales division. The last member of the quartet, John Hughes, who is retiring at the age of 65 after 43 years' service, has been manager of the air goods sections, including football bladders and Float-on-Air upholstery, for 30 years.

D. P. G. Moseley, chairman and managing director, at a special meeting to mark the occasion, presented them with cheques; and presentations were also made from their colleagues.

. . . and 150 at G and I

Another presentation took place at Greengate and Irwell. The chairman, Jasper Frankenburg, presented £50 cheques to Mrs L. Thompson, C. Nealon and T. Wilson, who have all completed 50 years with the company.

The ceremony followed a lunch given by the directors for the recipients and the company's pensioners.

Director of Sports

I. A. Thorpe, MBE, sales and marketing manager of the Dunlop Sports Co., has been appointed sales director. Aged 49, Mr Thorpe spent his early career in the retail business with Kendal Milne of Manchester. He subsequently had considerable experience in advertising and was for many years with Notleys and later Highams, before joining Dunlop in 1953 as advertising manager of the Dunlop Allied Group. In this position he was responsible for all the company's products other than tyres. He joined the Sports company in 1959.

A Soviet Success

At the 1961 British Trade Fair in Moscow, the Russian public flocked 1,500 strong to the Exhibition cinema, not to see Yuri Gargarin's flight in outer space, but the premiere of DCL's production of 'The Double Bond'. The film, which was recently shown in London in an English-language version, describes in a non-technical manner the production and utilization of petroleum based chemicals. The idea for the film originated with DCL's participation in the Moscow Trade Fair and a Russian version of the film was completed on May 1 1961. The object was to present, in about 25min., the size and range of DCL's activities in petroleum chemicals. The fundamental process of cracking and the conversion of the resulting olefines to polythene,

Now just a memory of a Christmas—these reinforced-plastics Alice in Wonderland figures were taken down from the London store Selfridges on Christmas Eve. Glass fibre manufactured by Deeglas Fibres Ltd. was used. Will they appear in the January sales?

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SRF

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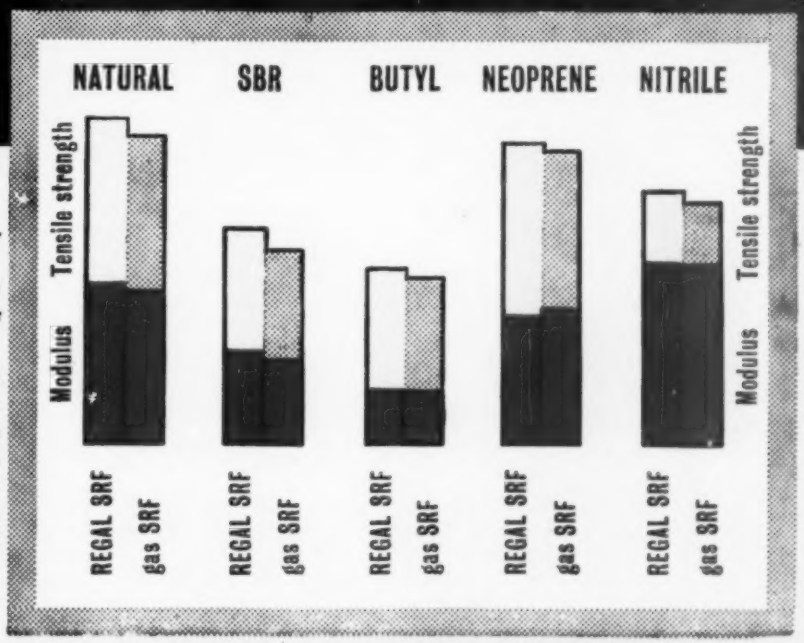

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ethyl alcohol, phenol, styrene and other compounds is shown. The utilization of these compounds in the works of the DCL Chemical division is indicated, together with their conversion into pvc, polystyrene and other plastics materials by the Distillers Plastics group.

Bluebird in Australia

Back from the arid wastes of Lake Eyre in central Australia is Andrew Mustard, leader of a Dunlop expedition which has made a study of conditions at the site where Donald Campbell and the new Bluebird hope to attack the world land speed record on an undisclosed date in 1962. Mr Campbell's last attempt was at Bonneville, Utah, in 1960 (*RPW*, May 28 1960, 806).

Mr Mustard told me that one of the major problems to be overcome at the test site is 'psychological' strain. Workers will have to endure such unpleasant working conditions as dust-storms, intense heat, and remoteness from civilization for periods of a month and longer at a time.

The Lake Eyre surface differs from the flats at Bonneville in that the Utah flats are restricted for fast acceleration and braking lengths. There should be a better tyre grip on the Eyre flats and the tyre temperature is expected to be kept below 100°C. The tyre tread is much like previous ones but is slightly thicker.

The tests so far have been made with special half-scale tyres fitted to a Jaguar XK150, and further trials will have to be carried out, using full-size tyres on Bluebird itself, before a final choice can be made. The Dunlop team will go to Lake Eyre completely equipped with both tubed and tubeless tyres, either of which are fully capable of matching Bluebird's performance.

Polly Ester Says...

'Band heater — rum punch for the New Year's Eve orchestra'

Japanese Shawbury

Just before Christmas the Rubber and Plastics Research Association welcomed a five-man delegation from Japan. The delegation is examining the activities of various co-operative research institutions in Europe. So perhaps we can expect a Japanese 'Shawbury' in the not-too-distant future.

The visitors who included Heishiro Tabata, managing director of the Japan Chemical Industry Association, were shown round the laboratories by Dr W. F. Watson, director of research and his senior staff.

Although primarily concerned with aspects of the Association's administration and the organization of research work, the delegation was interested in the historical background of RAPRA, which was set up in the Imperial Institute, London, in 1919. The visitors saw, too, how the future is being catered for in the shape of the new laboratories at present under construction.

It is certainly something that, out of more than 50 research associations working for industry in this country, Shawbury was one of the four selected by these visitors — particularly as it is hardly the most convenient place to get to in a tight programme of visits.

F. C. Walmsley

F. C. Walmsley will join British Insulated Callender's Cables Ltd. on January 1 1962 as assistant divisional manager, capacitor division.

THE LEGAL ANGLE

Infringement Remedy?

By a Barrister

IF someone infringes one of your trade marks, you can sue. If you win, you will force your competitor to stop the infringement and probably to pay you damages as well. The same applies where someone is passing off his goods as your own, by marketing them under a similar name or style, but it takes many months before most cases can be tried. This problem of stopping unfair competition in the interim was worrying a certain producer of branded rubber goods.

'By the time this case reaches trial', the manufacturer told his lawyer, 'much of our hard-earned goodwill will be shared with our competitors. What can we do in the meantime, to safeguard our position until trial?'

The lawyer told him that there are two parties to be considered in cases like this. There is the individual or company who claims that some right is being infringed. The Court, if satisfied that there is a powerful, *prima facie* case, can grant an injunction to him on what is known as an 'interlocutory application'. This is a request to the Court, made between the time when the writ is issued and the time when the case comes up for trial.

If the Judge is satisfied, by evidence sworn on affidavit, that there is an excellent chance of the claim succeeding and that the delay would gravely prejudice the applicant, he can grant an injunction, forbidding any respondent to behave in the manner complained of until the case comes for trial.

On the other hand, the position of the respondent must be protected. Suppose, for instance, that when the case comes for trial, the Court decides that there has been no infringement of the trade mark or no actionable passing off. He will have been deprived of the right to behave as he had been — in a perfectly proper manner — for a long period. His advertising may be out of date and, in the case of a trade mark infringement, all or most of his pre-packs, his stationery and his special tools, may be out of date. The interim order may cause him severe and almost irreparable harm.

Because of this, the Court is reluctant to make interim orders but when it does, it often imposes a term that the injunction is given subject to the applicant's liability to pay damage to the respondent if it be proved, in the eventual outcome of the litigation, that the respondent is in the right and has suffered damage through the granting of the interim relief.

What happened to the rubber trader? His case has not yet reached trial, but he obtained an interim injunction a short time ago, 'upon the usual terms'.

The Year in Review

MONTH BY MONTH SURVEY OF THE MAIN EVENTS IN THE RUBBER AND PLASTICS INDUSTRIES IN 1961

By JOHN ACRES, I.C.I. Ltd.

JANUARY

Home

THE New Year Honours' List included the name of George Beharrell, who was created a Knight Bachelor. Professor G. Gee and Sir Harry Melville were made honorary fellows of the Institution of the Rubber Industry.

British Insulated Callender's Cables were awarded the contract for the supply and installation of 53 miles of flexible submarine piping to convey natural gas from British Columbia to Vancouver Island. Imperial Chemical Industries Ltd. and the American Cyanamid Co. signed an agreement governing the use in the United States of the know-how arising from I.C.I.'s work on methyl methacrylate production and polymerisation.

A record attendance marked the annual dinner and dance of the Manchester Section of the Institution of the Rubber Industry on January 13 at Belle Vue, Manchester.

Dr C. J. T. Cronshaw, a former chairman of Dyestuffs Division of Imperial Chemical Industries Ltd., and a contributor to the early development of synthetic rubber, died on January 5.

Overseas

Some details of the Polymer Corporation plant to be built in France were given at a luncheon in Strasbourg to announce the formation of Polymer Corporation (SAF). The plant, to produce 10,000 tons of speciality rubbers a year, will be on stream in 1962.

Argentine Government support for the country's first petrochemical complex, in which five American companies will be involved, was announced in New York on January 17.

At a meeting in Kuala Lumpur on January 27, addressed by Sir Geoffrey Clay, plans were made to revive the Malayan Section of the Institution of the Rubber Industry.

FEBRUARY

Home

Imperial Chemical Industries Ltd. announced plans for the construction of a £100m. petrochemical complex on a site near Rotterdam. Plans to increase the capacity at the I.C.I. polyvinyl chloride factory at Hillhouse, Lancashire, were announced also.

An unofficial strike at the Speke factory of Dunlop Rubber Co. Ltd., which started on February 10, brought production to a standstill. The strikers were subsequently joined, on February 21, by workers at the Inchinnan factory of the India Tyre and Rubber Co. Ltd., and work was not resumed at either factory until February 27.

A plan to establish a £750,000 reclaim factory at Liverpool was announced jointly by the Dunlop Rubber Co., Ltd., and the United States Rubber Reclaiming Co.

An inaugural meeting of the Plastics Federations of the European Free Trade Association was held in London on February 16. The annual dinner and dance of the British Plastics Federation was held on February 10 at the Grosvenor House Hotel, London. Dr Dorothy M. Farmer was awarded the Fellowship of the Plastics Institute and became the first lady Fellow of the Institute.

The first Swinburne Award address was given by Professor Gee in London at the Royal Institution on February 16.

Revertex Ltd. revealed plans to set up a synthetic rubber latex plant, jointly with International Latex Corporation, on a 60-acre site near Grimsby.

Overseas

The International Institute of Synthetic Rubber Producers, meeting in New York on February 20, announced appointments to its Technical Committee, and to the SBR Division, and the Statistical Committee, both of its North American Section.

American Society for Testing Materials Committee D-11 on Rubber and Rubberlike Materials, meeting in Cincinnati on February 1-3, included a paper on 'Interlaboratory Studies of Test Methods.'

G. L. Cabot, founder of the Cabot Corporation, celebrated his 100th birthday on February 26.

In the United States price movements included a 2c./lb. rise in the price of rayon tyre cord.

The first units of the polyurethane intermediates factory of Progil-Bayer-Ugine at Pont-de-Claix, near Grenoble, went into production.

MARCH

Home

A joint conference of the Institution of the Rubber Industry, and the Plastics Institute, on 'Rubber and Plastics in Cables,' was held on March 1 in London. A Young People's Lecture was given by Dr L. Mullins in Cardiff on March 27. A symposium on recent developments in polyvinyl chloride compounding was held at the National College of Rubber Technology on March 21-22.

Board of Trade figures, published during March, showed that plastics materials sales in 1960, at 561,700 tons, were over 12% higher than in 1959.

The death occurred on March 7 of Thomas Martin, chairman of Anchor Chemical Co. Ltd. Frank Savaage was appointed as chairman and joint managing director of the company.

H. H. Woolveridge succeeded C. H. Glassey as president of the British Plastics Federation at the annual meeting of the Federation in London.

The Prime Minister of Malaya, Tunku Abdul Rahman, visited the laboratories of the Natural Rubber Producers' Research Association at Welwyn Garden City on March 20.

The 13th technical exhibition of the Oil and Colour Chemists' Association opened in London on March 6.

Petrocarbons Developments Ltd. signed an agreement to supply Rumania with an £800,000 polystyrene plant.

British Enkalon announced plans to erect a nylon plant at Antrim, Northern Ireland, to produce both nylon yarn and material for the plastics industry.

Goodrich-Gulf Chemicals Inc. granted a licence to Shell Chemicals Co. Ltd. to manufacture polydiene synthetic rubbers in the UK.

The new Imperial Chemical Industries Ltd. plant for manufacturing polyester film was officially opened at Dumfries on March 2.

Overseas

In USA the Federal Trade Commission ruled that contracts between Firestone Tire and Rubber, Goodyear Tire and Rubber, and the Atlantic Refining Co. and the Shell Oil Co. were unlawfully injuring competition in the distribution of tyres, batteries and accessories.

A batch of new products were to the fore in USA during March. On March 21 the Shell Chemical Co. announced the full-scale production of Shell isoprene rubber, and the American Chemical Society meeting in St. Louis included the disclosure by Union Carbide of work on Nylon 7. A further range of low modulus furnace blacks, the Neotex materials of the Columbian Carbon Co., were announced on March 28. The success of the polyformaldehyde resin Delrin was marked by further price reductions — to 65c./lb. — a total drop

of 30c./lb. since the product was introduced in January 1960.

The directors of Dayco Corporation, Dayton, Ohio, approved, on March 28, the sale of the company's tyre division to Firestone Tire and Rubber Co., Akron. Dayco was the twelfth largest tyre manufacturer in the USA.

Dr H. L. Fisher, Goodyear Medallist in 1949, died on March 19 at the age of 76.

Chemische-Werke Hüls and Goodrich-Gulf Chemicals Inc. concluded agreements to exchange know-how on synthetic rubber production.

APRIL

Home

Further details of British Hydrocarbon Chemicals Ltd. development of their new site at Baglan Bay, South Wales, were released. Ethylene and butadiene, and ethylene dichloride are included in the products to be made from the light petroleum distillate obtained from the Llandarcy refinery of British Petroleum.

In Glasgow on April 14 a joint meeting of the Institution of the Rubber Industry and the Plastics Institute local sections heard a collection of papers on the subject 'Some Newer Ideas in Plastics and Coatings.'

A fire at the Oldham factory of Plastikade Ltd. on April 6 caused damage estimated at £300,000.

During April substantial price cuts in the prices of polystyrene produced in the UK became effective. Simon-Carves Ltd. announced that they had signed contracts worth £7m. for the sale of four polyethylene plants to East European countries.

The Royal Institute of Chemistry annual conference, at Southampton University from April 20-22, included a symposium on 'Chemicals from Petroleum.'

The first units in the expansion scheme for the Midland Silicones Ltd. factory at Barry came into operation during April.

The British Plastics Federation formed a packaging group under the chairmanship of D. J. Liston.

Overseas

The 79th meeting of the Division of Rubber Chemistry of the American Chemical Society was held in Louisville on April 19-21. The Goodyear Medal address was presented by Dr H. A. Winkelmann on April 20, and the invited paper was by Professor H. Eyring on 'Thermodynamics and Transport Properties of Monomers and Polymers'.

In the United States District Court of Delaware, E. I. du Pont de Nemours and Co. Inc. filed a suit against the Celanese Corporation alleging infringement of the du Pont basic patent covering crystalline polyformaldehyde.

Plans for a synthetic rubber plant (capacity 20,000 tons/year) and for a carbon black plant (capacity 10,000 tons/year) at Nahorkatiya, in Assam, were revealed. Natural gas supplies will be used to generate electricity for the scheme.

A new scientific institute to carry out fundamental research was inaugurated on April 27 by the American Cyanamid Co. at Cologny, on the bank of Lake Geneva.

The Milan International Fair, which opened on April 12, featured three new elastomers developed by Montecatini, Elaprin, Dutral and Astyr 1,4 Cis.

MAY

Home

A symposium on the extrusion of natural and synthetic rubbers was held by the Rubber and Plastics Research Association at Attingham Hall, near Shrewsbury, on May 1-4. The symposium included a works visit to see a full-scale horizontal fluid bed in use for continuous vulcanization of extrusions. The first plastics technical meeting of RAPRA was held in London on May 11 and featured in particular discussions on the research programme of the new Research Association.

The London Sections of the Institution of the Rubber Industry and the Plastics Institute held a symposium on 'Cellular Polymers' in London on May 5.

The annual general meeting of the Rubber Growers Association was held in London on May 19. The retiring chairman, W. Anderson, commented on some of the present difficulties facing natural rubber producers. The new chairman is to be C. Jackson.

The McFadzean laboratory of British Insulated Callender's Cables Ltd. was officially opened on May 16 by HRH The Duke of Edinburgh.

W. G. Morris, former chairman of Greengate and Irwell Rubber Co. Ltd., died on May 6.

Overseas

Many British polymer firms were prominent at the British Trade Fair which opened in Moscow on May 19. Among the orders secured was one for a £4m. nylon 66 tyre cord plant gained by Vickers Armstrong (Engineers) Ltd.

The successful entry of the USA into the Space Age, with a manned suborbital flight on May 5, stimulated several accounts of the numerous uses of plastics materials in the 'Project Mercury' capsule.

A paper on 'Recent Developments in the European Plastics Industry,' by Dr R. Gath (Badische Anilin-und Soda Fabrik), was included in the programme for the annual meeting of the Overseas Section of the Society of Chemical Industry held in Holland, at Scheveningen, on May 30-31.

After a 12-year legal battle over an anti-trust complaint, a United States Supreme Court ruling meant that during the next 10 years E. I. du Pont de Nemours and Co. Inc. must dispose of its 63m. share holding in the General Motors Corporation.

Two schemes to produce isoprene cheaply as a basis for polyisoprene rubber were revealed. Goodyear Tire and Rubber Co. began the construction of a polyisoprene rubber plant which uses a dimerizing-pyrolysis process to prepare isoprene from propylene, and the Houdry Process Corporation announced the development of a one-step dehydrogenation process starting from isopentane.

It was reported from the Netherlands that AKU and B. F. Goodrich Co. were planning to double the capacity of their synthetic rubber plant at Arnhem to 30,000 tons/year.

In the USA new wage agreements were negotiated between the unions and Goodyear Tire and Rubber Co. to provide substantial wage increases over the next two years.

News of political unrest in the Middle East was accompanied by the announcement of plans to establish the Kuwait Petrochemical Co., with production of a range of materials, including polyvinyl chloride, scheduled for 1963.

Dunlop Rubber Co. Ltd. announced plans to establish a £2m. tyre factory in Nigeria, at Ikeja, near Lagos.

Synthetic processes for isoprene, and chemical engineering equipment for synthetic rubber, were featured at a meeting of the American Institute of Chemical Engineers and the Chemical Engineering Institute of Canada on May 7-10 at Cleveland, Ohio.

Dr R. P. Dinsmore retired from Goodyear Tire and Rubber Co. on May 1 after nearly 47 years with the company. His services to the rubber industry were marked by the award of the Colwyn Medal in 1957 and the Goodyear Medal in 1955.

JUNE

Home

The International Plastics Exhibition (Interplas 61) was opened at Olympia, London, on June 21 by Lord Hailsham, Minister of Science. The proceedings included an International Plastics Convention on June 26-28, and as a prelude to the exhibition the *Financial Times* published a 12-page 'Survey of the Plastics Industry' on June 19.

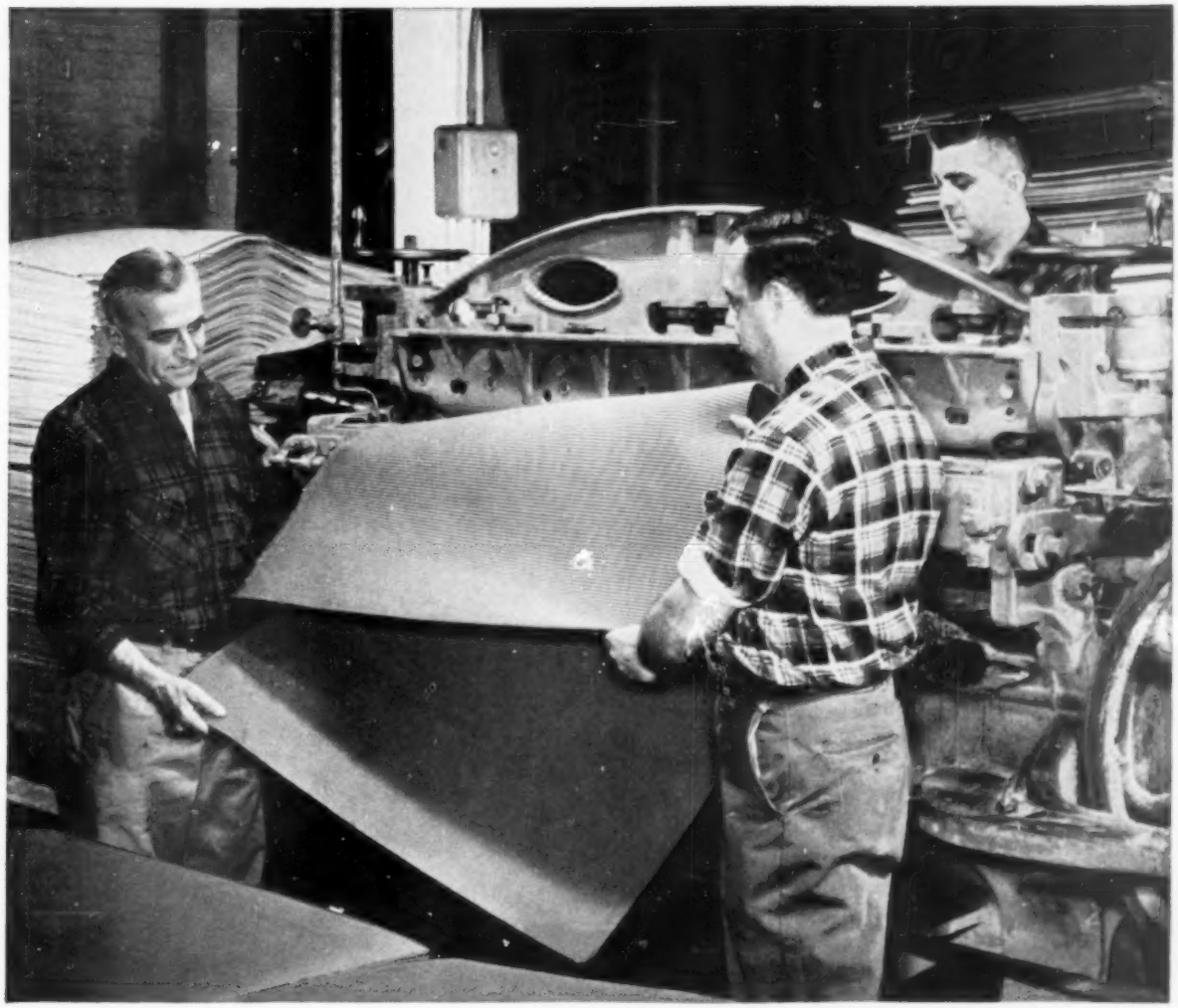
A two-day conference which opened in London on June 19 discussed education and training in the plastics industry. There were contributors from the USA, Holland, Germany and Russia, as well as from the United Kingdom.

The Foundation Lecture of the Institution of the Rubber Industry was given in Birmingham on June 2 by J. W. Denson, who spoke on 'Some Ancillary Aspects of Compounding.'

Sir William McFadzean, president of the Federation of British Industries, was principal guest at the Plastics Institute dinner in London on June 27.

Two important projects for the production of nylon 6 in the United Kingdom were revealed. Courtaulds Ltd. announced plans for the construction of a plant to produce 10,000 tons/year of caprolactam by a process licensed from Snia Viscosa.

Imperial Chemical Industries Ltd. announced the conclusion of an agreement with the Swiss company Emser



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Werke A.G./Inventa A.G. whereby I.C.I. will operate the Emser Werke/Inventa processes for caprolactam and nylon 6 in this country.

A new polyether foam cushioning material, Crestafoam, was launched on June 1 by Microcell Ltd.

Figures from the International Rubber Study Group estimated 1961 rubber consumption in the Free World to be 3,902,000 tons, of which natural rubber would account for 2,037,000 tons.

E. I. du Pont de Nemours and Co. (United Kingdom) Ltd. announced plans for the construction of an isocyanate plant adjacent their Neoprene plant at Maydown, in Londonderry.

The annual general meeting of the Rubber and Plastics Research Association of Great Britain was held in London on June 14.

A fire severely damaged the Watford factory of British Moulded Hose Co. Ltd. on June 21.

Overseas

The 9th National Plastics Exposition, sponsored by the Society of the Plastics Industry Inc., was held in the New York Coliseum from June 5-9. The Europlastica International Plastics Fair opened in Ghent on June 16 under the aegis of the Belgian Plastics Industry.

The 64th annual meeting of the American Society for Testing Materials, at Atlantic City from June 27-30, which approved a change in the name of the society to American Society for Testing and Materials, included a meeting of Committee D-11 on Rubber and Rubberlike Materials.

At the 1961 Achema Exhibition in Frankfurt the record attendance was over 100,000. There were 1,400 exhibits from 17 countries in the field of chemical equipment.

In the United States on June 23 Firestone Synthetic Rubber and Latex Co. announced a price of 30c./lb. for its new polybutadiene rubber. There was a further crop of price reductions in other plastics materials, including polypropylene film, polyester resins, and fluoroethylene resins.

Goodrich-Gulf Chemicals Inc. granted the Polymer Corporation patent and plant design rights for the manufacture, use and sale of cis-polybutadiene. It was announced that Courtaulds had acquired a minority interest in Koppers Co. Inc., preparatory to broadening its activities in the United States outside the viscose rayon field.

The Rotterdam plant of Nederlandsche Dow Maatschappij N.V. for the production of styrene/butadiene copolymer latices came on stream with a range of products for the paint and paper industries.

The availability of butyl rubber in latex form was announced by Enjay Chemical Co.

The first caprolactam plant of E. I. du Pont de Nemours and Co. Inc., was put on stream at the end of June, with an annual capacity of 50m. lb., at Beaumont, Texas.

JULY

Home

The awards of the Colwyn Medal to Dr L. R. G. Treloar, and of the Hancock Medal to Mark M. Heywood were announced by the Institution of the Rubber Industry during July.

The Chemical Society held an International Symposium on inorganic polymers on July 18-21 at the University of Nottingham.

The Russian Trade Fair, held at Earls Court, London, from July 7-29, provided a varied glimpse into life and industrial development in the Soviet Union. The Soviet Minister of Foreign Trade, who opened the exhibition, later visited the laboratories of Imperial Chemical Industries Ltd. Plastics Division at Welwyn Garden City.

Sir Laurence Merriam was elected President of the Plastics Institute at the annual general meeting on July 25. The annual general meeting on July 27 of the Federation of British Rubber and Allied Manufacturers included a survey of his two years of office by the retiring President, H. G. W. Chichester-Miles. The new President is Maurice Baker, of Firestone Tyre and Rubber Co.

The death occurred on July 21 of C. B. Copeman, 1960 Hancock Medallist and past chairman of Maclaren and Sons, publishers of *RPW*. C. H. Glassey, chairman of British Industrial Plastics, and until 1961 president of the British Plastics Federation, died on July 3 at the age of 71. A. S. Bishop, who retired in 1960 as chairman of Goodyear Tyre and Rubber Co. (UK) Ltd., died on July 10 at the age of 69.

The new melamine crystal plant of Cyanamid of Gt. Britain Ltd., of Gosport, Hants., went on stream with an annual capacity of about 3,000 tons.

Overseas

The Goodyear Tire and Rubber Co. reported plans for its largest ever two-year capital investment programme at a press conference in New York on July 24. The expenditure of $180m. includes new tyre plants in Texas and Turkey as well as expansion and modernization schemes elsewhere.

Herman R. Thies, president of the International Institute of Synthetic Rubber Producers, announced that the Institute was to establish an office in Brussels. The Institute is also to consider sponsoring several fundamental research projects.

In the United States a new highway financing bill which raised Excise taxes on tyres, tubes, and tread rubber, became effective on July 1.

It was revealed during July that the investment of Imperial Chemical Industries Ltd., in its £7m. complex to be built at Rotterdam, was to include plants for acrylic sheet and moulding powder.

Reeves Bros. Inc., of New York, completed an agreement with Lintafoam Industries Ltd. to jointly exploit its know-how and patents in the field of polyurethane foam — textile laminates. Allied Chemicals Co. joined the ranks of polyether manufacturers when its 20m. lb./year plant at Baton Rouge, Louisiana, went on stream.

In France, the Michelin Co. announced plans to build a synthetic rubber factory, of unspecified type or capacity, in the Bordeaux area.

H. G. Binnerman, manager of the rubber chemicals section of the Elastomer Chemicals Dept. of E. I. du Pont de Nemours and Co. Inc., retired on July 31, after 33 years with the company.

AUGUST

Home

Board of Trade figures published during August showed that the plastics industry had achieved a new record for sales of plastics materials. In the second quarter of 1961 sales totalled 158,200 tons.

On August 18 the International Synthetic Rubber Co. Ltd. announced that it was to sell Diene polybutadiene rubber under licence from Firestone Synthetic Rubber and Latex Co. Eventual production of this synthetic rubber in the United Kingdom was also contemplated.

A fire at the Vitafoam Ltd. factory at Middleton, Lancs., on August 5, caused extensive damage to the company's Don Mill. It was followed on August 7 by a fire at the Manchester factory of Polyurethane Ltd.

L. M. Read was elected chairman of the Council of the Plastics Institute, and Maldwyn Jones elected vice-chairman.

The 123rd annual meeting of the British Association for the Advancement of Science, opened in Norwich on August 30.

Metal Box Co. Ltd., Shell Chemicals, and National Distillers and Chemical Corp., announced joint plans for a United Kingdom factory for the manufacture of plastics packaging materials.

Substantial cuts of 3d.-4d./lb. in polythene prices were made on August 1 by Imperial Chemical Industries Ltd., and followed by other United Kingdom producers. Price reductions of 1½d./lb. on two types of neoprene made at du Pont's Londonderry plant were effective from August 1.

Overseas

The Division of Rubber Chemistry of the Chemical Institute of Canada held its annual conference in Montreal on August 4.

It was announced in Sarnia that the Polymer Corp. was not to proceed with its plans to build a butyl rubber plant in the United Kingdom. Alternative European sites would be examined.

The formation of another company to exploit the potentialities of the European Common Market was announced. E. I. du Pont de Nemours

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SHELL

SHELL PROCESS OILS

and Co. Inc. and Etablissements Kuhlmann are to form Dekachimie to manufacture and sell isocyanates from a plant to be built near Lille.

Charles C. Gates, founder and president of the Gates Rubber Co., died on August 29 at the age of 83.

SEPTEMBER

Home

Simon Handling Engineers Ltd. signed a contract worth £1.8m. for the supply of handling, storing and weighing equipment for a new Russian tyre factory at Voljsk.

An International Packaging Exhibition was held at Olympia from September 5-15.

The foundation stone of extensions to the laboratories of the Rubber and Plastics Research Association of Great Britain was laid at Shawbury on September 20 by P. W. Howard, President of the Association. The new laboratories will cost about £145,000.

An ultra-modern battery container moulding plant, built and equipped at a cost of £500,000, was opened on September 19 at the United Ebonite and Lorival Ltd. factory at Little Lever, Lancs.

The Minister of Labour was one of the speakers at the Guildhall on September 26 at a dinner given to mark the 21st anniversary of the National Joint Industrial Council for the rubber industry. The annual report of the Chief Inspector of Factories, published during September, noted that there was a sharp rise in the accident rate in the rubber and plastics industries in 1960, during a year which was generally a poor one for industrial safety.

A Plastics Pipe Manufacturers Society was founded to encourage research and to ensure quality standards.

Imperial Chemical Industries Ltd. announced pilot plant production of a high-tenacity polypropylene yarn at its Wilton Works.

P. W. Howard retired as deputy chairman of BTR Industries Ltd.

Some ISAF carbon black prices were reduced in the United Kingdom at the end of September.

Overseas

It was announced in the United States that E. I. du Pont de Nemours and Co. Inc. and Phillips Petroleum Co. had come to an agreement over disputed patents relating to high density polythene.

The 80th meeting of the American Chemical Society, Division of Rubber Chemistry, was held in Chicago from September 6-8, and featured a joint symposium with ACS Petroleum Division on 'Elastomers from Petroleum Hydrocarbons'.

The first commercial manufacture in the USA of an ethylene/propylene copolymer rubber, was announced by Enjay Chemical Co. Goodyear Tire and Rubber Co. announced a new polybutadiene rubber Budene, which was to go into commercial production at the company's new $20m. plant at Beaumont, Texas.

A 46-day strike at B. F. Goodrich's Miami, Oklahoma, plant, ended on September 12, after an agreement which included some wage increases. A strike by workers at General Motor's plants throughout the United States had the effect of depressing the US rubber market.

Shell Chemical Co. announced the conclusion of an agreement with Goodrich-Gulf and Montecatini giving Shell an exclusive licence to manufacture cis-polybutadiene rubber in France.

A £2.1m. contract was signed by the governments of Ceylon and Russia to provide for the construction of a tyre factory near Colombo.

BTR Industries Ltd. announced the formation of a subsidiary in Cologne, BTR Industries GmbH, especially to manufacture and sell hose in the European Common Market area.

The American Chemical Society meeting included the announcement of Dr Melvin Mooney as 1962 recipient of the Goodyear Medal presented by the Division of Rubber Chemistry.

In France, the Firestone Tire and Rubber Co. tyre factory at Bethune, was formally opened on September 21.

OCTOBER

Home

A decision by the Board of Trade on October 30, that as a temporary measure sales could be made without limit from its natural rubber stockpile, subject to a maximum of 1,000 tons in any month at less than 27d./lb., caused a slump in natural rubber prices, and provoked angry comment from rubber-producing countries.

At a dinner in London on October 3 Professor Giulio Natta was awarded the first international synthetic rubber gold medal, sponsored by *Rubber and Plastics Age*.

Company news included the joint announcement by the Marbon Chemical Division of Borg Warner, and the Anchor Chemical Co. Ltd., of plans for the erection of a £2m. factory at Grangemouth to manufacture Cycolac polymers. British Xylonite Co. Ltd., and the Calico Printers Association Ltd., announced the formation of a jointly-owned company Plastics Printers Ltd., to specialize initially in the production of printed flexible polyvinyl chloride. Super Oil Seals and Gaskets Ltd., officially opened on October 4 their new factory at Llanishen, Cardiff, which will be the largest high-pressure hose manufacturing plant in Europe.

A fire on October 10 at the New Mills, Derbyshire, factory of Kay Brothers Plastics Ltd., caused nearly £100,000 worth of damage to urethane foam stocks and processing equipment.

Some reductions in tyre prices, effective from October 2, were announced by most of the United Kingdom tyre manufacturers. The reduction in car tyre prices amounted to 6%.

Overseas

Dr J. A. Talalay, well known for his work as a latex technologist, died on October 15 in New Haven, Connecticut, at the age of 79.

It was announced in Canada that Allied Chemical Canada Ltd., were to build a diisocyanates plant in Ontario to supply the Canadian market. This followed news of plans for a tolylene diisocyanate plant at Charlestown, W.Va., to be erected by Food Manufacturing Co.

NOVEMBER

Home

Figures released in November showed that UK sales of plastics materials in the third quarter of 1961 were 13% higher than in the same quarter of 1960. Exports compared well with 1960 figures although below the figures recorded earlier in 1961.

Imperial Chemical Industries Ltd. announced on November 2 that it was to approach the Board of Trade to introduce anti-dumping legislation against cheap imports of polythene from the United States. This application was subsequently supported by other United Kingdom producers, and was extended to include imports from Italy.

A symposium on fundamental and practical approaches to ageing protection was held at the laboratories of the Natural Rubber Producers Research Association at Welwyn Garden City on November 2-3. A safety study conference, organized by the Rubber Manufacturing Employers' Association was held at Southport from November 15-17.

There were a number of exhibitors from the plastics industry at an Engineering Materials and Design Exhibition held at Earls Court during November.

Dunlop Rubber Co. Ltd. released details of its inflatable rubber liferafts designed for davit launching.

A new technical service laboratory was opened at the Carrington plant of Shell Chemical Co. Ltd. at the beginning of November. Dewey and Almy Ltd. announced on November 1 that the United Kingdom's first polyisobutylene plant would be built at Baglan Bay, South Wales. The plant will use a butane/butylene feedstock from British Hydrocarbon Chemicals Ltd., and is scheduled for completion in 1962.

Shell Chemical Co. reduced the price of its polyisoprene rubber in the USA to 23 cents/lb. on November 15. This was followed by a similar price reduction in the United Kingdom on November 16.

The eighth convocation of the National College of Rubber Technology was held at the College on November 30. The head of the college reported that the last session had been a record one, and that the proposed extension to the College, which could be more suitably named the National College of Polymer Technology, had

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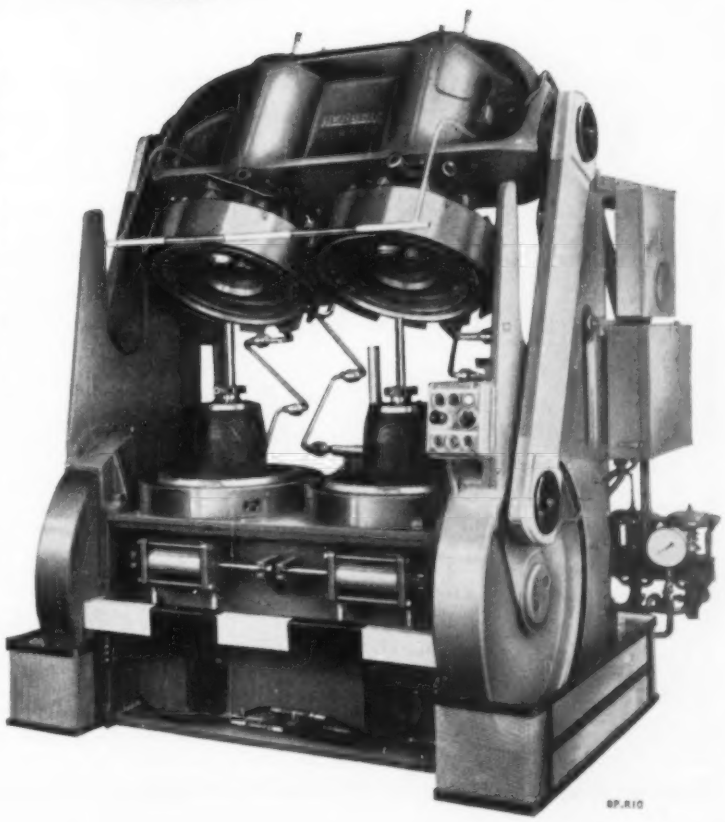

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been approved by the Minister of Education.

At a particularly successful symposium in Manchester on November 3, organized jointly by the Royal Institute of Chemistry, and the Society of Chemical Industry, three papers were read on various aspects of 'Polyurethane Foams'.

Overseas

The American decision to revise the selling procedure of its natural rubber stockpile brought renewed protests from rubber producing countries already upset by a similar decision by the United Kingdom government at the end of October.

In Paris on November 14 a spokesman for Société des Elastomères de Synthese, who recently opened an SBR plant at Berre, near Marseilles, expressed concern about the position of the European Common Market countries in respect of synthetic rubber exports from America and Eastern Europe.

Patent invalidation suits were initiated in Japan by Shin Nippon Chisso Hiryo Co., against the original polypropylene patents held by Montecatini. This action was in reply to earlier infringement actions filed by Montecatini.

Bunawerke Hüls GmbH announced cuts of about 5% in its synthetic rubber prices during November.

C. D. Harries was elected as eighth member of the Rubber Science Hall of Fame during a ceremony at Akron University on November 17.

DECEMBER

Home

The net sales of plastics materials in the UK in the third quarter of 1961 were 13% higher than in the same period last year, said the Board of Trade. Net sales of polystyrene were 24% higher than a year ago, polyolefines 40% up and pvc 12%.

Production of Pirelli resilient webbing reached a figure of 1.5m. ft. a week. Pirelli has produced over 35,000 miles of webbing at its Burton-on-Trent factory.

Francis Shaw and Co. Ltd. introduced a new extruder to its range of plastics processing equipment — the Type P 4½in., specially designed for the extrusion of high impact polystyrene or polythene sheet and blown polythene film.

William Freeman and Co. Ltd., manufacturers of Suba-Seal and Suba-Maid products celebrated its silver jubilee on December 5.

After 26 years on the board of Monsanto Chemicals Ltd., Sir William Garrett retired. J. M. Kershaw was appointed to the board.

Foster M. Stewart is to retire from his position as managing director of the North British Rubber Co. on December 31. He will remain a member of the board of directors and will be succeeded as managing director by E. A. Martin, currently works director.

The Board of Trade extended an application for an anti-dumping duty to be placed on imports of US polythene to cover shipments from Italy.

J. H. Fenner and Co. Ltd. opened a new research centre, called the Hainsworth Research Centre, at Hull. Products developed and tested include synthetic rubber seals for use in machinery and motor vehicles.

Plastics containers, capable of withstanding pressures up to 200psi, were made by Emerson Walker Ltd., the Gateshead plastics blow moulding machine tool company.

Durapipe and Fittings Ltd. obtained planning permission for a £50,000 extension to its thermoplastic pipe and fittings factory at West Drayton, Middlesex.

Imperial Chemical Industries, Britain's largest industrial company, announced on December 18 that it was to make a share exchange offer worth around £180m. for Courtaulds, the leading man-made fibre manufacturer in the UK. Acceptance of the offer would mean a group with net assets of over £1,000m. and employing over 140,000 people, responsible for some 90-95% of man-made fibre output in Britain and about 25% of UK paint production. S. P. Chambers, chairman of I.C.I., said that the merger would lead to lower prices, greater profits, improved quality and the development of new fibres. Among world ratings the new group would rank third outside the USA being exceeded only by the Royal Dutch/Shell and Unilever groups.

Overseas

Reductions in the price of Cycolac ABS from 10-14% in truckload quantities, were announced in USA by Marbon Chemical Division of Borg-Warner Corp., Washington, West Virginia.

A $7m. plant for the production of phthalic anhydride is to be erected in Puerto Rico, it was announced. It is scheduled to start production in 1962.

A new aircraft tyre capable of handling the tremendous heat, loads and speeds of the 2,000-mile-an-hour B-70, was developed by the B. F. Goodrich Co. nearly a year ahead of schedule.

H. E. Humphreys, Jun., chairman of the board of United States Rubber Co., resigned as chairman of the North British Rubber Co. Ltd.

The Ceylon Government started talks with US officials in Colombo on the release of rubber from the American stockpile, which, it stressed, had tended to depress the rubber market.

Four more recommended methods of test for plastics were agreed to be published by the International Standards Organization (ISO) as a result of the eleventh meeting of the technical committee on plastics (ISO/TC61) which took place in Turin.

The Tokyo Spinning Co. proposed to produce a new textile fibre of the polyester group under a technical tie-up with the Goodyear Tyre Co. (USA).

The biggest shoemaker in the world, British Bata Shoe Co., opened a £60,000 crepe rubber factory in Western Nigeria.

Monsanto Chemical Co.'s hydrocarbons division revealed plans to construct a multi-million dollar plant in Texas City (USA) for production of vinyl acetate monomer.

Société Nationale des Petroles D'Aquitaine (France) decided to enter the plastics production field. Published plans envisaged an annual output of 25,000 tons of styrene and 10,000 tons of polystyrene.

BOOK REVIEW

Whetting the Tool Designer's Appetite

PLASTICS TOOLING — 2nd edition. — By Malcolm W. Riley, published by Reinhold Publishing Corporation, 216 pp., price 60s.

The importance of quicker and cheaper tooling methods today deserves emphasis and details can be found in this well-presented reference book. Doubts that plastics tools are cheap and nasty versions of more orthodox metal ones are soon dispelled and an honest reading will remove this prejudice; nevertheless the limitations of plastics such as strength, heat resistance and accuracy are fairly stated.

The opening chapters should whet the appetite of the progressive tool designer and ensure that he will give due consideration to the possibilities of plastics. There follow details of the chemical and physical properties of epoxy resins, judged to be the most important for tooling purposes, and of other materials such as polyesters, phenolics and silicones (vinyls do not get a mention). Reinforcing materials including glass, metal, ceramics and paper honeycombs receive a full treatment.

The chapters on general fabrication techniques, repairs, modifications and design go a long way to provide those minor details of know-how so often considered to be obtainable only by experience. Sections on the planning and control of production help particularly to squash this attitude, but more references might have been found to back up these chapters.

The title of the book may mislead one to expect not the use of plastics materials in tool production, but a description of tools for plastics fabrications and this category is also discussed together with metal forming, foundry tools, models and auxiliary tools, jigs, etc. Future developments in metal fibre reinforcement and metal surfaces on plastics are predicted.

This is a useful book, amply illustrated, with a well-balanced index and some useful references. — J. T. N.

PLASTICS MACHINERY DEVELOPMENTS

Automatic Presses

STOKES' TRANSFER AND TRANSFER/COMPRESSION MACHINES

By JOHN SHEARING

THE F. J. Stokes Corporation, of Philadelphia, has for some time been operating in Britain through F. J. Stokes Ltd. So far, the emphasis has been on various forms of compression moulding presses but blow moulding and other equipment is also offered.

One of the really outstanding features of the compression type equipment is the automation which has been achieved. Model 743 is an automatic transfer press and Model 745 an automatic transfer/compression press.

These presses have all the latest features, including controlled preheating, mould loading with high pressing speeds and positive ejection. All of these features and others, result in minimum rejects and considerable mould protection is afforded.

Features of Loading

An automatic preheater and feeder are provided as normal components of the automatic transfer press Model 743. The preforms are bulk loaded and then conveyed to the preheater and the mould by a built-in conveyor system. The automatic feeder system has been designed to accommodate a wide variety of preform sizes so that the range of mouldings for automatic processing should not be limited.

While the first preforms are being cured, the next batch of preforms is being preheated. This system, with shorter transfer strokes and the preheating, results in faster cycles. The controlled feeding of the stacked preforms also reduces trapped air and thus defects. The preheating also means that for a given transfer pressure a larger shot can be achieved since the energy required to move the fluid material is less.

One of the usual troubles of automatic feed is the high rate of rejects because of under or over-weight preforms. The Stokes' equipment, however, is provided with automatic rejection devices for inaccurate preforms which thus cuts rejects to a minimum. Another feature of the preheating is that relatively low pressures can be employed which gives maximum mould protection.

Moulding and Ejection

Many transfer presses today have combined speed and pressure controls of the clamping and transfer systems. In the case of the Stokes' equipment, however, the speed and pressure for clamping and transfer are independently operated which thus permits greater flexibility. In addition, separate temperature controls are provided for each half of the mould.

All the presses can be operated automatically or semi-automatically. Each press is also a completely self-contained unit, no additional equipment being required.

The moulded components are mechanically removed by the comb with either bottom or top knockout. Positive comb and transfer ram hold up action on the top knockout and positive discharge is an important feature of the Stokes' patented system. This is important since, as in so much transfer moulding, it is not necessary to rely on gravity for ejection. Also, there is no danger of parts sticking to comb slots and breaking pins on the next cycle. It is obvious, therefore, that every effort has been made to prevent damage to the mould by operational defects. Whether the measures will safeguard a distorted mould, however, is difficult to say.

Transfer/Compression

Apart from the straight transfer press, similar transfer/compression presses are also available. Conversion from transfer to compression or *vice-versa* is very simply accomplished by depressing a switch. Another important feature of the changeover is that all components are permanently fitted to the press so that no additions or withdrawals of any sort are required.

These combination presses give all the loading, moulding and ejection advantages of Stokes' transfer moulding presses plus the added flexibility of compression operation. The presses may be run as automatic transfer, automatic compression, semi-automatic compression or semi-automatic transfer. An optional extra for the system is a patented powder preheater which reduces the compression moulding cycles from 15% to 25%.

TABLE 1. STOKES' AUTOMATIC TRANSFER AND COMPRESSION MOULDING PRESSES

	75-*ton*	150-*ton*	200-*ton*	300-*ton*
Clamp capacity (tons)	75	150	200	300
Clamp stroke (in.)	12	14	16	12
Mould area (in.)	15 × 13	24 × 20	30 × 24	24 × 16
Daylight—press open (in.)	28	32	38	34-26
Daylight—press closed (in.)	16	18	22	22-14
Clamp ram speeds:				
Closing (in./min.)	300	400	400	600
Pressing (in./min.)	27	22	18	—
Opening (in./min.)	300	400	400	500
Bottom plunger cap (tons)	19	30	40	70
Bottom plunger stroke (in.)	8	10	10	12
Bottom plunger speeds:				
Advance (in./min.)	90	125	90	150
Pressing (in./min.) (adjustable)	0.90	0.125	0.90	0.65
Return (in./min.)	100	140	100	150
Ejection cap (tons):				
Top ejection	3	5	5	15
Bottom ejection	5	12	12	15
Ejection stroke (in.):				
Top ejection	2½	3	3	4½
Bottom ejection	3⅞	4⅞	4⅞	4½

New Industrial Plastics Machines

TWO new developments have recently been announced by Industrial Plastics Ltd., manufacturers and distributors of plastics equipment. The first is the Giro-Feeder with a capacity of 70 to 1,000lb./hr. and the second is the Giro-Dicer, the largest of the machines having a capacity of over three tons per hour.

The Giro-Dicers are available in sizes 12in., 18in., 24in., 32in. and 36in., and have intake speeds from 10-200ft. per min., and outputs from 1 to over 3 tons per hr. An interesting feature is the greatly reduced noise factor which is such an annoying feature with so many machines. Other interesting mechanical features include nylon or fibre gears with steel, where lubrication is unnecessary and the bearings, which are grease-lubricated and sealed for life.

Plantation Newsletter

GOVERNMENT COMMITTEE ON ESTATE SUB-DIVISION

FROM KUALA LUMPUR

ONCE again the problem of Malayan rubber estates being bought up by financiers, or groups of them, and then broken up into smallholdings has been spotlighted in this country. Every time an estate is subdivided, a large number of estate employees and their families find themselves without work and without accommodation.

At the moment, three estates have been taken over and fragmentation will automatically follow. When it does, more than 500 families will be thrown out of jobs.

The best solution to the problem is obviously legislation. The Government took the first step towards this by appointing a committee to go fully into the question. Its report, published earlier this year, indicated that it could not submit constructive recommendations because of lack of comprehensive information on the extent of subdivision (the committee preferred this word to fragmentation).

A survey to get full details was then entrusted to the Department of Economics of the University of Malaya, under Professor Ungku Aziz. The field investigations have now been completed and the report is almost ready for release.

What is to happen next was not considered by the original committee, but presumably it will reconsider the whole problem and, in accordance with its terms of reference, recommend steps which it considers necessary 'arising from the assessment of the effects of subdivision'. Whatever may be its ultimate recommendations, the committee must complete its work expeditiously otherwise more and more hardships are likely to befall workers on estates, many of them second and third generation on the same estate.

Subdivision has been found to be highly profitable by speculators who buy up an estate. It has been found that there are ready buyers for slices of 30 or 40 acres containing mature rubber trees, particularly if they are high yielding. But, of course, once an estate is subdivided all the facilities hitherto offered, such as schools, clinics and entertainment tend to disappear.

Already the National Land Finance Co-operative Society has bought one $3m. estate near Kulim, in North Malaya, which was for sale and fragmentation. This estate is now working for the benefit of its own members, mostly estate workers.

The president of the society, Dato V. T. Cambanthan, who is also Minister of Works, Posts and Telecommunications, has now called for more supporters, saying that with a membership of 60,000 and monthly subscriptions totalling over $1m. it could purchase an estate every two or three months and thus prevent further fragmentation.

But even if the society could buy every estate offered for sale — which obviously it could not — there is still nothing to prevent the speculators from out-bidding the society and carving it up for sale in small pieces in the usual manner. Dato Sambanthan has called this policy a stain on Malaya's concept of free enterprise and has appealed for a sense of social responsibility.

by our Malayan Correspondent

There is no doubt that speculators are out to make quick money and they have little concern for the disruption in the life of estate workers. Therefore it would appear that legislation to prevent fragmentation will provide the only solution.

Wage Agreement Ending

Malaya's rubber plantation workers will terminate their 1959 wage agreement with their employees tomorrow (December 31). Their union, the National Union of Plantation Workers, which represents about 100,000 of the 300,000 estate workers, has given a month's notice to this effect to the Malayan Planting Industries Employers' Association.

This follows the unsuccessful attempts by the NUPW and the MPIEA to reach an agreement on the revision of the 1959 wage structure. After a series of meetings representatives from both parties met the Commissioner for Industrial Relations who is still hoping to bring about a settlement.

Under the 1959 agreement, a tapper is paid a basic daily wage of $2.20 and a 'price evaluation' of 56 cents when the price of rubber is between 90 cents and $1 a lb.; and 70 cents when it is between $1 and $1.10 a lb. For most of this year the rubber has been low, selling in the 70 cents region. Thus, the sliding scale has been well down.

As early as September, P. P. Narayanan, general secretary of the union, spoke in terms of a go-slow action by workers if the union's wage talks failed. The MPIEA said earlier that higher output must be linked with any higher wages.

Speaking at the annual delegates' conference of the Malayan Trades Union Congress, Mr Narayanan attacked foreign capital which was under the misapprehension that cheap labour was available in Malaya. He also hit out at absentee owners who, he claimed, through stupidity could cause chaos in this country.

He said Malayan workers wanted to share in the prosperity of Malaya . . . they wanted a fair share of the profits instead of them all being ploughed back to the shareholders.

Big Business in Stolen Rubber

If the estimates by the United Planting Association of Malaya that more than 1,000 tons of rubber have been stolen in the first ten months of this year from estates, are to be taken as a guide, then the time is overdue for drastic action.

The theft of such large amounts of rubber — admittedly not done in bulk — shows that this has reached a stage where it qualifies for the title of 'big business'. According to the Association, 2,522,240lb. of rubber (some 1,126 tons) were stolen between January and the end of October. Calculated at the present price of approximately 75 cents a lb., the value would come to nearly $2m. (almost £250,000).

According to the UPAM thefts have dropped slightly in recent months. In March, 140 tons of rubber were reported stolen; 124 tons in April; 103 tons in September; and 91 tons in October. But the October figures are preliminary. The UPAM said that although the situation had improved slightly there was no room for complacency. Rubber stealing was still the biggest problem facing estate managements.

The drop in thieving in recent months has been attributed to the lower price of rubber. The three most common forms of thefts are: illegal tapping, thefts from the field and stealing from storehouses.

All stolen rubber must find its way on to the market and the most obvious way is through certain rubber dealers. It would be wishful thinking to assume that these certain dealers do not know they are handling suspect rubber. Today there are rubber inspectorates in Seyangor and Malacca, undoubtedly doing their utmost to check the number of thefts and to keep tag on rubber dealers within those two States. But this still leaves nine other States without any inspectors at all.

Many estates have recruited more watchmen, yet still rubber disappears. Receivers are always difficult to trap, whatever kind of illegal goods they deal in, and without the receivers who are prepared to pay ready cash for stolen property then there would be little point in stealing. This, of course, particularly applies to such commodities as rubber.

Since last year, a special committee has been sitting to prepare a detailed draft bill, aimed at consolidating the present regulations in all States, and to give more 'teeth' to the authorities in its battle against rubber thefts.

This committee has now completed its work and the new Ordinance can be expected to go on to the Statute Book in the very near future. What effect this will have still remains to be seen, but it would appear certain that some of the more stringent penalties which

can be imposed on shady dealers and the thieves will act as a deterrent.

However, whether it will prevent rubber thefts completely is doubtful. It is still a fairly simple operation to tap rubber trees illegally and it would be virtually impossible for any of the larger estates to employ sufficient watchmen to keep an eye on all their divisions. There has always been some thieving of rubber in Malaya and it is safe to assume that there always will be. But almost $2m. worth of rubber has got to a stage where it can hardly be dismissed.

The National Union of Plantation Workers has blamed secret society influence on estates, which they claim has been allowed to get a hold through the contract system, for much of the rubber thieving. Be that as it may, the fact remains that the NUPW, through its many thousands of members, is in a most advantageous position to assist the authorities in stamping out this menace. It is to the workers' advantage, just as much as the estate owners, that rubber thefts should be brought down to the barest minimum.

Leptospirosis

The death of a European planter in Selangor has been attributed to leptospirosis, a water-borne disease which is now the subject of intensive research by the Institute for Medical Research here. Terence Charlesworth, 35, died in the British Military Hospital near Kuala Lumpur, shortly after he had been engaged in surveying a swampy area of Damansara Estate.

A spokesman for the Institute said that this was the first death caused by leptospirosis for two years. There have been other deaths suspected of being caused through this disease but none have provided conclusive evidence.

Leptospirosis has baffled medical authorities ever since its discovery in Malaya in 1927. Infection can result in innumerable ways, such as contact with animals, drinking water, bathing or even walking barefoot across a field.

But the most common source of infection in Malaya has been traced to rivers, streams and swampy ground where the leptospirae are carried in rat's urine.

A spokesman for Mr Charlesworth's employers, REA and Cumberbatch Ltd., said that just before his illness, Mr Charlesworth had been engaged in surveying a swampy area of the estate with a view to replanting a palm oil project. Mr Charlesworth had been planting in Malaya since 1953. He had earlier served in the Malayan Police Force since 1948 when the Emergency was declared.

Hughes and Hughes Move

Hughes and Hughes Ltd. has moved from its office at 35 Crutched Friars, E.C.3. The company's new address is 10 Stratton Street, London, W.1, and its telephone number GROsvenor 6191.

Rubber Statistics

UNITED KINGDOM — MALAYA

RUBBER exports into the UK during November 1961 were 3,454 tons down on the same month of last year. This is shown in official figures released this week by the Board of Trade. Detailed origin figures (in tons) are given below.

IMPORTS
(Including synthetic and reclaimed)

	Nov., 1961	Nov., 1960
Nigeria	1,693	1,524
Singapore	3,135	4,468
Federation of Malaya ..	9,271	8,743
Ceylon	210	681
British North Borneo ..	275	291
Canada	2,215	2,327
Other Commonwealth Countries and Irish Republic	249	187
Vietnam	918	866
Indonesia	671	842
USA	1,252	2,293
Other foreign countries	2,812	3,933
Total	22,701	26,155
Rubber Latex	1,956	1,853
Other raw, including crepe	15,508	19,069
Balata	93	68
Synthetic rubber ..	3,908	3,528
Others	1,236	1,637
Total	22,701	26,155

EXPORTS
(Including synthetic and reclaimed)

Commonwealth ..	1,467	1,541
West Germany ..	316	337
Netherlands	334	108
France	486	361
Spain	707	1,073
Other foreign countries	2,864	2,582
Total	6,174	6,002

Latex and revertex shipments in October totalled 8,674 tons against 9,556 in September and comprised: UK 1,334, US 662, West Germany 975, Japan 1,851, other European countries 2,526, other Commonwealth countries 824 and other countries 502.

Malaya

Malayan rubber production during October totalled 65,532 tons compared with 64,636 tons in September, according to official statistics released in Kuala Lumpur. Imports totalled 5,649 tons against 5,704 tons and exports totalled 68,363 tons against 70,211 tons. Stocks at the beginning of October were 78,783 tons (revised) and at the end of October 78,878 tons comprising 55,271 tons in dealers' hands, 17,885 tons on estates (against 16,257 tons revised at the end of September), and 5,722 tons awaiting shipment. Local consumption in October was 602 tons, loss in process 23 tons and statistical errors and omissions 2,098 tons.

Calls for Tenders

Sponges for South Africa

Sponges, viscose or alternative, resistant to oil and water at 212°F. are required by Stores Department, South African Railways.

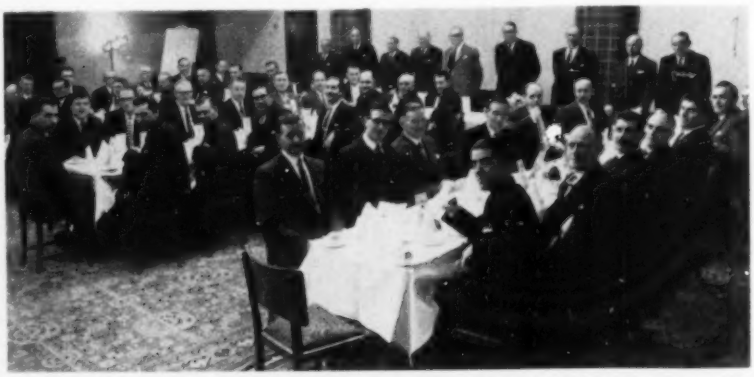
Bids in sealed envelopes, endorsed 'Tender No. K447: Filter Sponges', should be addressed to Chief Stores Superintendent SAR, PO Box 8617, Johannesburg.

Closing date: January 10 1962. (Ref. ESB/38560/61.)

Tyres and Tubes

Tyres and tubes with and without flaps are required by the Director-General, Union of Burma Purchase Board, St. John's Road, Rangoon, to whom bids should be sent, quoting Quotation No. IIIA/49/P and M (61-62).

Closing date: January 8 1962. (Ref. ESB/38543/61.)



Sales representatives and senior members of Ekco Plastics Ltd. at the company's annual sales conference dinner, which was held at the Queen's Hotel, Westcliffe-on-Sea, recently. The dinner concluded the conference, at which the design, development and marketing of new products were discussed in relation to the recent expansion of the Ekco plastics works

PLANTATION SHARE SURVEY

Meeting the Shareholders

SO often these days company meetings are dull affairs. On the whole, apart from collecting their dividends and glancing through the balance sheet, shareholders do not bother to turn up on the one day when they have the opportunity of meeting their chairmen and the directors.

Mind you, having attended many hundreds during the past ten years or so I must confess that many of the annual get-togethers are not worth the trouble of travelling to attend. So often these days many of the men at the top consider that they should rush through the formalities of a meeting; afterwards one quite often hears in the bar a boast that it took only two-and-a-half minutes to get through and say goodbye to shareholders.

But there are, of course, exceptions. Some of the chairmen of rubber companies do go out of their way to make it as interesting for their members as possible.

Sir John Hay is one of the foremost in this category. When he recently met shareholders of KAMUNING RUBBER, he commented on the position arising from the decision of the UK and US governments to dispose of up to 6,000 tons monthly from their rubber stockpiles more or less regardless of price. Though the prospective disposal of 72,000 tons a year is not in itself too significant in the context of an annual production of some 2m. tons, it has served to underline and speed up an existing downward trend in price brought about by ample supplies from normal sources. The further setback of around 7 Malayan cents a lb. which has materialized over the past few months, is equal to a loss of some £50,000 on Kamuning's annual output. In fact, the present market price is about 5d. per lb. below 1960-61 proceeds.

But the company has protected its position by forward sales and nearly half the 1961-62 output has been disposed of at an average of 25.7d. per lb. gross.

Sir John made the forecast of a 1961 surplus supply of 50,000-70,000 tons, taking the increased stockpile sales into account. If anything, the outlook was for a further decline in selling prices, he indicated, although there was some evidence that the change-over from natural to synthetic was being checked. So far as Kamuning was concerned, Sir John asserted that the group was well equipped to continue profitable production 'at any probable price of rubber'.

For the past year the company has been able to keep its dividend payment at 33⅓%. But I feel there will not be a great deal of surprise if it is lowered for the current year.

Some people think it surprising that TALI AYER RUBBER was not included in the plan to bring the other ORIENTAL ESTATES AGENCY companies under the wing of STRAITS RUBBER. These arrangements were carried through in 1960 and 1961 and involved BADENOCH RUBBER, BAGAN SERAI RUBBER, PALOH PLANTATIONS, RUBABA RUBBER and SABRANG RUBBER.

Tali Ayer is now very much the junior member of the group. Following a slump of 7½d. a lb. in sale proceeds in the year to June 30 last, profits have fallen from £102,300 to £70,000, and the dividend is being lowered from 45% to 32½%. The very big difference in profits is more than matched by the altered position in the stock market where the current dividend yield is now quite high.

Profits of the MERLIMAU PEGOH, after tax, amounted to £278,100 in the past year. This compared with the previous total of £235,000. Included in the current total was £16,100, which is attributed to DENISTOWN RUBBER ESTATES, which became a member of the group during the year, but nothing on account of the company's interest in MIDDLETON PLANTATIONS sold to CRAIGELEA RUBBER PLANTATIONS in exchange for cash and shares in that concern. A payment of 20% has been decided upon, made up of interims of 6% and 14% on a larger capital. Last time the total of 25% was handed round.

Gloomy Views

In November, producers and dealers held the most gloomy views on rubber prospects. The announcement by the US Government that it was releasing rubber from its stocks at the rate of 5,000 tons a month, coming on top of a reduction in the imports of the Communist bloc, brought a drop in prices to an extremely sensitive market. However, the gloomy forecasts have proved mostly illusory, and although well down on last year's levels, this week's average price of 23d. a lb is ¼d. above November's low.

It is now generally agreed that the market reacted too sharply to the stock releases. With world production running at over 2m. tons and trade becoming steadily brisker in the US, the stock surplus represented a drop in the ocean, and is being rapidly absorbed. Demand is always high in December with American industry for tax reasons anxious to replenish supplies before the year's end. In addition, the lower prices of natural rubber have put it into a stronger competitive position *vis-a-vis* the synthetic varieties.

The British market has been largely isolated from the US stock withdrawals, but has had to deal with its own Government's decision to sell 1,000 tons a month. This has not disturbed the Malayan prices as much as was anticipated but there is a general belief that prices there are being kept artificially high by producers holding back output.

How long this can go on is not known but the situation may be relieved if the reports of substantial new buying by Russia are confirmed.

Long-Term Prospects

Concerning long-term prospects the future is shrouded in doubts. Synthetic rubber, helped as it was by the high price of natural rubber earlier this year, will continue to expand its share of the market as it develops with the aid of technical research. It is becoming increasingly inexpensive, and in the US could soon replace natural rubber in the production of car tyres. Rubber output is also expected to exceed consumption in 1962 according to a report of the International Rubber Study group.

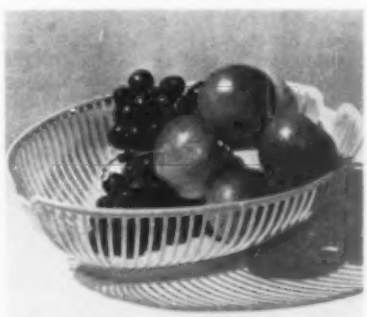
In these circumstances, and with January by tradition a month of reduced prices, the present lower levels are likely to continue.

Heavy Losses

Members of the AMALGAMATED RUBBER AND INDUSTRIAL PRODUCTS are told that the company has suffered heavy losses from its investment in REPETITION TYRE AND ACCESSORIES, and also the new Agrarian law in Indonesia, will cause further losses of a permanent nature in the value of the company's Indonesian investment.

The net loss on the investment in Repetition Tyre is £51,635 and in SOEMBER AJOE RUBBER ESTATES and JAVA RUBBER PLANTATIONS £7,664. It is proposed to place the two plantation companies in liquidation at an early date, also to write off the indebtedness of the Indonesian subsidiary company amounting to £19,249, and to write down the cost and development of estates of the Indonesian wholly-owned subsidiaries by £15,781.

These items make an aggregate loss of £94,329, which it is proposed to write off by reducing the nominal amount of each of the company's 1,249,894 issued 2s. shares to 6d. and then to consolidate the 6d. shares into shares of 1s.



New to the Bex housewares range is this streamline basket which can be used as a fruit bowl or bread basket. Made from rigid polythene, the basket has a raised base, giving it a firm stand

Industry INTELLIGENCE

Technical Data

Neoprene Filler Dispersion

Rubber technologists are well aware of the importance of obtaining complete dispersion of compounding ingredients to provide maximum tensile strength. A leaflet issued by the Elastomers Chemicals Department, E. I. du Pont de Nemours and Co. (Inc.), Wilmington 98, Delaware, reference BL-372, gives the results of laboratory tests carried out on neoprene. These show the physical properties of an EPC carbon black loaded compound mixed in a mill or in a Banbury mixer by two different procedures. In one case all the carbon black was added before the oil and in the other case black and oil were added simultaneously. Another table shows the variation in properties from batch to batch using the two procedures on a mill.

Urethane Foam Panels

Technical Information Sheet Urethane PC/U30, issued by the Polymer and Chemicals Service Department, Dyestuffs Division, Imperial Chemical Industries Ltd., describes the fabrication of sandwich panels using polyurethane rigid foam.

Lightweight sandwich panels or laminates, consisting of a rigid core bonded between various facing materials, have high strength to weight ratio and excellent thermal insulating properties.

The information sheet describes the equipment and techniques involved in the manufacture of such laminates by means of foaming-in-place methods using Daltolac 41/Arcton 11/Suprasec D rigid foam.

SBR/Polybutadiene Compounds

Wire and cable insulation compounds for low temperature service are often based on SBR having a low bound styrene content. This type of polymer is relatively expensive but remains sufficiently flexible at low temperatures without the use of ester plasticizers which adversely affect electrical properties.

Rubber Chemicals Sales Bulletin No. 37 issued by the Phillips Chemical Co., Akron 8, Ohio, relates to the use of Cis-4 polybutadiene in wire insulation compounds for low temperature service.

Data are presented showing how Cis-4 polybutadinee, which has outstanding low temperature flexibility, can be used with standard insulation polymers with normal or higher than normal bound styrene content to provide better resistance to low temperatures at considerably lower polymer cost. Figures are given for Philprene 1503 and 6630, blends of these two polymers with Cis-4 and for a competitive cold rubber.

Bavick-11

Bavick-11 is an acrylic polymer made by the J. T. Baker Chemical Co., Phillipsburg, New Jersey, and available in this country from Omni (GB) Ltd., 35 Dover Street, London, W.1.

A data sheet is available from Omni, showing the physical and chemical properties of the material and outlining various typical applications.

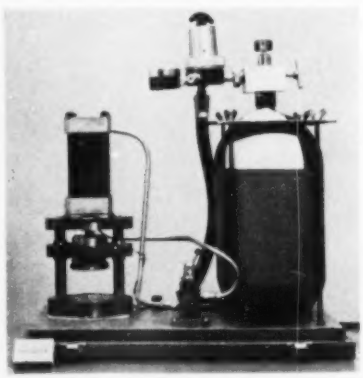
The material has a heat distortion temperature at 264psi when measured in accordance with AST and M method D648 of 244-252°F. It has good chemical and solvent resistance, can be fabricated by all methods normally used with acrylic resins and is available in transparent and translucent forms and in opaque coloured grades.

Machines, Materials and Equipment

Portable Press

Leicester, Lovell and Co. Ltd., North Baddesley, Southampton, has developed an unusual sales aid to promote its Resnit pre-impregnated fabric. This simulates, on a small scale, a hydraulic press fitted with a tool and the means of heating the tool to cure the prepreg.

This demonstration press is served by an air cylinder, of the type used by

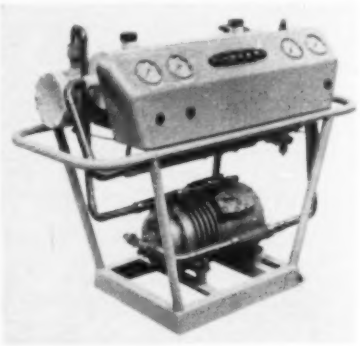


skin divers, containing sufficient air at 1,000psi for several hundred pressings. Control is provided by a pressure-reducing valve giving loads from 0-1,000lb. on the punch. A double acting piston is operated by a two-way toggle valve.

Low voltage resistance heaters are fitted to both the punch and die and are supplied with low volt current through a transformer fitted in the lid of the carrying case.

Liquid Chilling Units

A new design Liquid Chilling Unit has recently been released by Carter Thermal Engineering Ltd., Redhill Works, Birmingham, 25. Applications include chilling water for air conditioning systems, industrial processes



and beverage coolers. It also has numerous applications for cooling other liquids and gases, sometimes to zero temperatures.

It is available from 1½ to 22½hp and is delivered completely wired ready to install, only power and liquid connexions being required. Non-ferrous water passages minimize corrosion problems and the simple design makes the unit compact yet accessible for cleaning and servicing. High efficiency heat exchangers give the smallest possible floor space and the semi-hermetic system ensures greater reliability. Larger size packages units are also available with different layout.

Publications

Silicate News

Silicate News, the first issue of which was published recently, dated August 1961, is sponsored by Joseph Crosfield and Sons Ltd. This technical bulletin will be published quarterly and regular copies will be sent on request to the editors, Link Information Services Ltd., Orchard House, Orchard Street, London, W.1.

Its aim will be to give a comprehensive coverage, in abstract form, of all developments in the silicates industry both in the UK and abroad. New products based on silicates will be mentioned, patents and patent applications will be reviewed, long-term research projects will be reported on and each issue will spotlight one important or unusual use of silicates.

TRADE MARKS

Objections to the registration of any of the undermentioned applications may be lodged with the Comptroller-General of Patents, Designs and Trade Marks at the Patent Office, 25 Southampton Buildings, Chancery Lane, London, W.C.2, within one month of the date mentioned. The objections must be stated on Trade Marks Form No. 7, cost £2, obtainable through any money order office. The extracts—from 'The Trade Marks Journal'—given below are reproduced by permission of the Controller of H.M. Stationery Office.

(822,244). Tubes made of plastics; and mouldings and extrusions made of plastics; all included in Class 17. P. H. Muntz and Barwell Ltd., Alexandra Works, West Bromwich, Staffordshire. (Class 17; November 8 1961.)

Velvafoam (811,619). Cushions (upholstery), pillows (not for surgical or curative purposes), mattresses, bolsters, pads for upholstery, baskets, bed-rests and head-rests, and sleeping bags, all made wholly or principally of foamed plastics. Pritex (Plastics) Ltd., Staplegrove Mills, Wellington, Somerset. (Class 20; November 8 1961.)

Aroflint (823,729). Synthetic and artificial resins, being solvent and water-borne resin systems used in the preparation of paints, varnishes, enamels, lithographic inks, printing inks, and for other coatings and lacquers. Archer-Daniels-Midland Co., 700 Investors Building, Minneapolis, State of Minnesota, USA. Address for service is c/o Wildbore and Gibbons, 101 Leadenhall Street, London, E.C.3. (Class 1; November 15 1961.)

Glust (824,191). Adhesives and bonding agents, all included in Class 1, and chemical products for addition to cement to improve the properties thereof. Harvey Langford Ltd., 87 Regent Street, London, W.1. (Class 1; November 15 1961.)

Sarolene (803,831). Plastics in the form of powders, pastes, liquids, emulsions, dispersions and granulates, all for industrial use. Saro Products Ltd., Folly Works, Whippingham, East Cowes, Isle of Wight. (Class 1; November 15 1961.)

Adeco (802,813). Cut-out letters, numerals, signs and symbols, all made wholly or principally of plastics, and all for use as advertising media or for display or exhibition purposes. Armand Dutry and Co. (Adeco) Ltd., 32 Old Burlington Street, London, W.1. (Class 16; November 15 1961.)

Sarobond (811,373). Adhesive substances included in Class 16. Saro Products Ltd., Folly Works, Whippingham, East Cowes, Isle of Wight. (Class 16; November 15 1961.)

Olephane (814,794). Materials and containers, all made of plastics and included in Class 16, being for use in wrapping and packaging; and stationery. Avisun Corporation, 1345 Chestnut Street, Philadelphia, State of Pennsylvania, and 100 West 10th Street, Wilmington, State of Delaware, USA. Address for service is c/o Forrester, Ketley and Co., Jessel Chambers, 88/90 Chancery Lane, London, W.C.2. (Class 16; November 15 1961.)

Sinbad (823,777). Lifejackets. The Avon India Rubber Co. Ltd., 'Avon' India Rubber Works, Melksham, Wiltshire. (Class 9; November 15 1961.)

Reynolon (810,753). Wrapping and packaging materials made of plastics in film form. Reynolds Metal Co., 6601 Broad Street Road, Richmond Post Office, Henrico County, State of Virginia, USA. Address for service is c/o Marks and Clerk, 57 and 58 Lincoln's Inn Fields, London, W.C.2. (Class 16; November 15 1961.)

Increases of Capital

Robert Pickles Ltd. (37,875), manufacturers and merchants of impregnated and plastic coated fabrics, etc., Cairo Mill, Burnley. Increased on June 9 1961, by £100,000 in 1s. ordinary shares, beyond the registered capital of £100,000.

Plastikair Ltd. (655,886), plastics manufacturers, etc., 180 Bethnal Green Road, E.2. Increased on July 21 1961, by £500 in £1 ordinary shares, beyond the registered capital of £500.

Nu-Foam Plastics (Sussex) Ltd. (609,711), 1 Castle Square, Brighton. Increased on May 27 1961, by £5,000 in £1 10% cumulative preference shares, beyond the registered capital of £5,000.

Basil Sherman Ltd. (642,315), manufacturers of plastics articles, etc., 78 Mount Street, W.1. Increased on July 26 1961, by £1,200 in £1 ordinary shares, beyond the registered capital of £1,000.

Foam-Textile Laminators Ltd. (680,570) (formerly Tennel Ltd.), 73 Cheapside, E.C.2. Increased on June 28 1961, by £7,900 in 4,000 5% cumulative preference and 3,900 ordinary shares of £1 each, beyond the registered capital of £100.

Receiverships

Fibre Mouldings Ltd. (455,389), Farr Estate, St. Helens. James Moss, of 28 Queen Street, Albert Square, Manchester, 2, ceased to act as Receiver and/or Manager on November 17 1961.

NEW COMPANIES

Weblite Ltd. (709,702). December 4. Capital: £100 in £1 shares. To carry on the business of manufacturers of and dealers in tyres, etc. The first directors are not named. Reg. office: 5 Morwell Street, W.C.1.

Roach Plastics Ltd. (709,787). December 5. Capital: £100 in £1 shares. To carry on the business of manufacturers of, and dealers in, plastics goods, etc. The directors are: Edmund J. W. Aspinall, 57 Heywood Hall Road, Heywood, Lancs.; Norman Bamping, 561 Bolton Road, Bury, Lancs.; John W. S. S. Horridge; and Colin P. Sherwin. Regd. office: Roach Mill, Heywood, Lancs.

V. J. Breen (Holdings) Ltd. (709,499). December 1. Capital: £1,000 in £1 shares. To carry on the business of manufacturers of, and dealers in, plastics modelling and moulding materials, etc. The directors are: Victor J. Breen and Mrs. Deirdre P. L. Breen, both of Treetops, New Donewood, Copthorne, Crawley. Regd. office: Stephenson Way, Three Bridges, Crawley, Sussex.

Koch Laboratories Ltd. (709,295). November 29. Capital: £100 in £1 shares. To develop, market and exploit chemical engineering and other scientific processes, manufacturers of, and dealers in, chemicals, ferrous and non-ferrous products requiring the admixture of synthetic rubbers, polymers and chemical materials, etc. The directors are: Philip E. Koch and Mrs. Sheila Koch, both of 41 Monkfrith Way, Southgate, N.14. Regd. office: 32 Britton Street, Clerkenwell Road, E.C.1.

Forest Row Plastics Ltd. (709,286). November 29. Capital: £1,000 in £1 shares. To carry on the business of manufacturers of, and dealers in, plastics substances and materials of all kinds, etc. The permanent directors are: Anthony M. Halpern and Margaret G. Halpern, both of Blue Haze, Eastbourne Road, Forest Row, Sussex. Regd. office: Frith House, Church Street, Croydon, Surrey.

G.B.P. Ltd. (709,287). November 29. Capital: £750 in £1 shares. To carry on the business of laminated plastics fabricators, etc. The directors are: Peter H. Greville-Smith, Apple Acres, Rushock, Droitwich; James H. Bateman, The Blossoms, 25 Blakebrook, Kidderminster; Norman W. Purtell, 2 Shortyard, Wolverley. Regd. office: 1 Load Street, Bewdley, Worcs.

CLASSIFIED ADVERTISEMENTS

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8d. a word, Minimum 12/- Box 2/-

EXPERIENCED estimator required for rubber company engaged in the manufacture of moulded and extruded rubber products for the car trade. Applicants should be capable of compiling complete estimates from customers' drawings. Age 25 and upwards.—Box 242. (242)

EXPERIENCED plastics technologist required to head up development team charged with the execution of a far reaching and ambitious programme to increase substantially the scope and volume of business in a leading plastics and rubber manufacturing company. The fields to be covered are the furnishing and building industries. This post will offer ample opportunity for personal progress and calls for a man of good educational background with a comprehensive knowledge of PVC materials and processes, in addition to other plastic materials, and possessing the qualities of initiative and leadership.—Applicants are invited to write giving age, full details of education and training, present salary and posts held to Box 246. (246)

APPOINTMENTS VACANT

(continued)

ANCHOR Chemical Co. Ltd., Clayton, Manchester 11, have vacancy for a senior technologist interested in technical service and development work. Qualification AIRI or ARIC. Age 25-30. Experience of latex technology an advantage though not essential. After a suitable period of training, the successful candidate will be expected to discuss problems directly with customers. 5-day week, profit-sharing and pension schemes, canteen and social club facilities.—Applications to Technical Director. (249)

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Dundee, Scotland. (248)

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This progressive post will be based on the company's laboratories at Droitwich, Worcestershire.

Applications with full details should be addressed to Dr. K. W. Richmond, Bush House, Aldwych, London, W.C.2. (247)

FOREMAN required to take charge of rubber moulding shop. The department is engaged in the manufacture of mechanical goods and knowledge of rubber/metal bonding is preferable. Write stating age, present salary and full details of previous experience.—Howard Clayton-Wright Ltd., Wellesbourne, Warwick. (245)

RUBBER technologist, preferably of AIRI standard, with up-to-date knowledge of compounding and processing natural and synthetic rubbers, required for factory specialising in precision mouldings and seals. This is a senior position with appropriate salary and pension scheme.—Apply in first instance to Joseph Lucas (Electrical) Ltd., Chandos Road, Willesden Junction, London, N.W.10. (239)

SPONGE production. A chemist with good experience of sponge and a technician similarly qualified are urgently required by growing company in country district. Excellent working conditions and pension arrangements.—Write with full details of career and salary required to Box 229. (229)

VACANCY in expanding rubber factory situated South London for experienced foreman in calender and mixing shop. Experience in press shop an advantage. Excellent opportunity for right applicant. Salary according to experience. Bonus and pension scheme in operation.—Apply in confidence to Box 214. (214)

THE RUBBER AND PLASTICS RESEARCH ASSOCIATION OF GREAT BRITAIN

require a qualified rubber technologist to work on interesting new research and development projects, particularly concerned with new manufacturing processes. The work may involve carrying the projects to the full scale in the factories associated with RAPRA, but in any case will involve close contact with the industry. The RAPRA laboratories are now being considerably extended and are situated in a pleasant part of Shropshire, near to Shrewsbury, where houses are readily available to purchase at moderate prices. The appointment will be as a Technical Officer or Senior Technical Officer, the scales for which are at present:—T.O. £620 x 35—£1,005; S.T.O. £905 x 40—£1,305; with promotion prospects to Chief Technical Officer:—C.T.O. £1,200 x 50—£1,600. Applicants should have AIRI, ANCRT, or a science degree and some experience in the rubber industry.—Apply, giving full details of qualifications and experience, to the Secretary, RAPRA, Shawbury, Shrewsbury, Shropshire. (244)

APPOINTMENTS VACANT
(continued)

WORK study engineer with experience of all types of incentive schemes and labour controls required by John Bull Rubber Co. Ltd., Leicester. The work involves the control of a works study office and the successful candidate will be responsible to the Industrial Engineer.—Apply in writing to the Personnel Manager, Evington Valley Road, Leicester. (243)

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REGULAR quantities of all colours, Nitrile rubber waste.—Samples and details to Rushden Granulating Co. Limited, 21 Harborough Road, Rushden, Northants. Phone Rushden 3687. (241)

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ENQUIRIES sought for bulk production of rubber washers, automatically cut. Our machines can handle tubes of ¼in. bore up to 3in. o.d., with a cut of 1/16in. to 1in.—Enquiries to Box 236. (236)

MATERIALS WANTED

8d. a word, Minimum 12/- Box 2/-

LEATHER Components and Waste Ltd. We require regular quantities of the following rubber wastes: microcellular—all colours; gristle—all colours; resin—white and cream; any white rubber. All shades of all types of rubber waste, for sale from stock.—Offers with samples to 21 Harborough Road, Rushden, Northants. Phone Rushden 3687. (231)

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8d. a word, Minimum 12/- Box 2/-

SCISSORS, up to 7in. ground and set by London cutlers established over 100 years; 48 hours postal service, 1/6 per pair.—J. A. Fowler, 18/22 Bell Street, Edgware Road, London, N.W.1. PAD 1491. (74R)

MELLOR Equipment Ltd., Springfield Lane, Salford, 3, buy used machinery of Francis Shaw and Joseph Robinson manufacture.—Telephone Manchester, Blackfriars 1866. (428)

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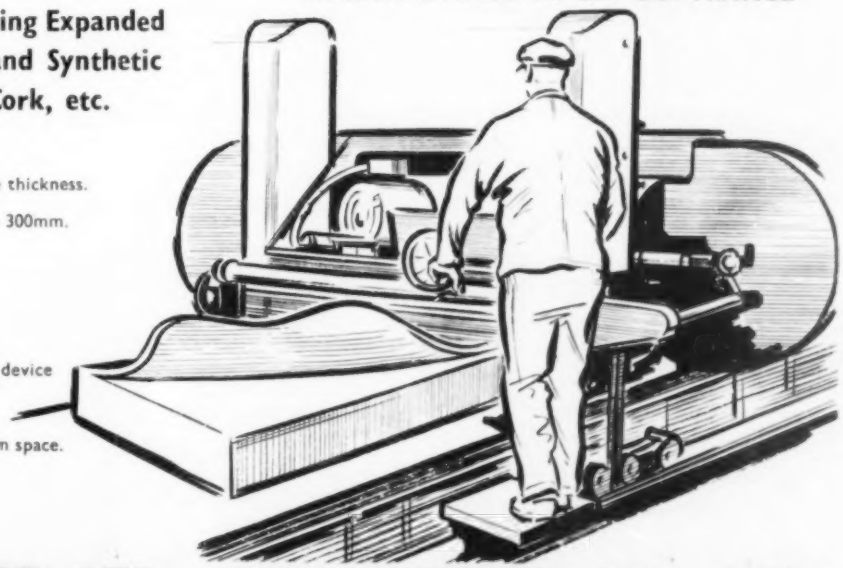

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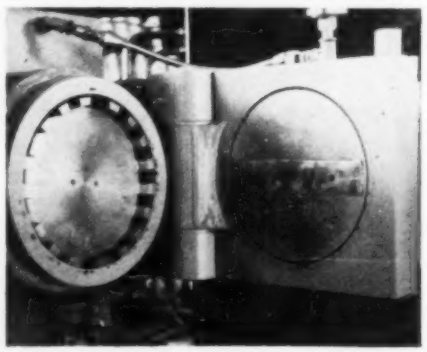

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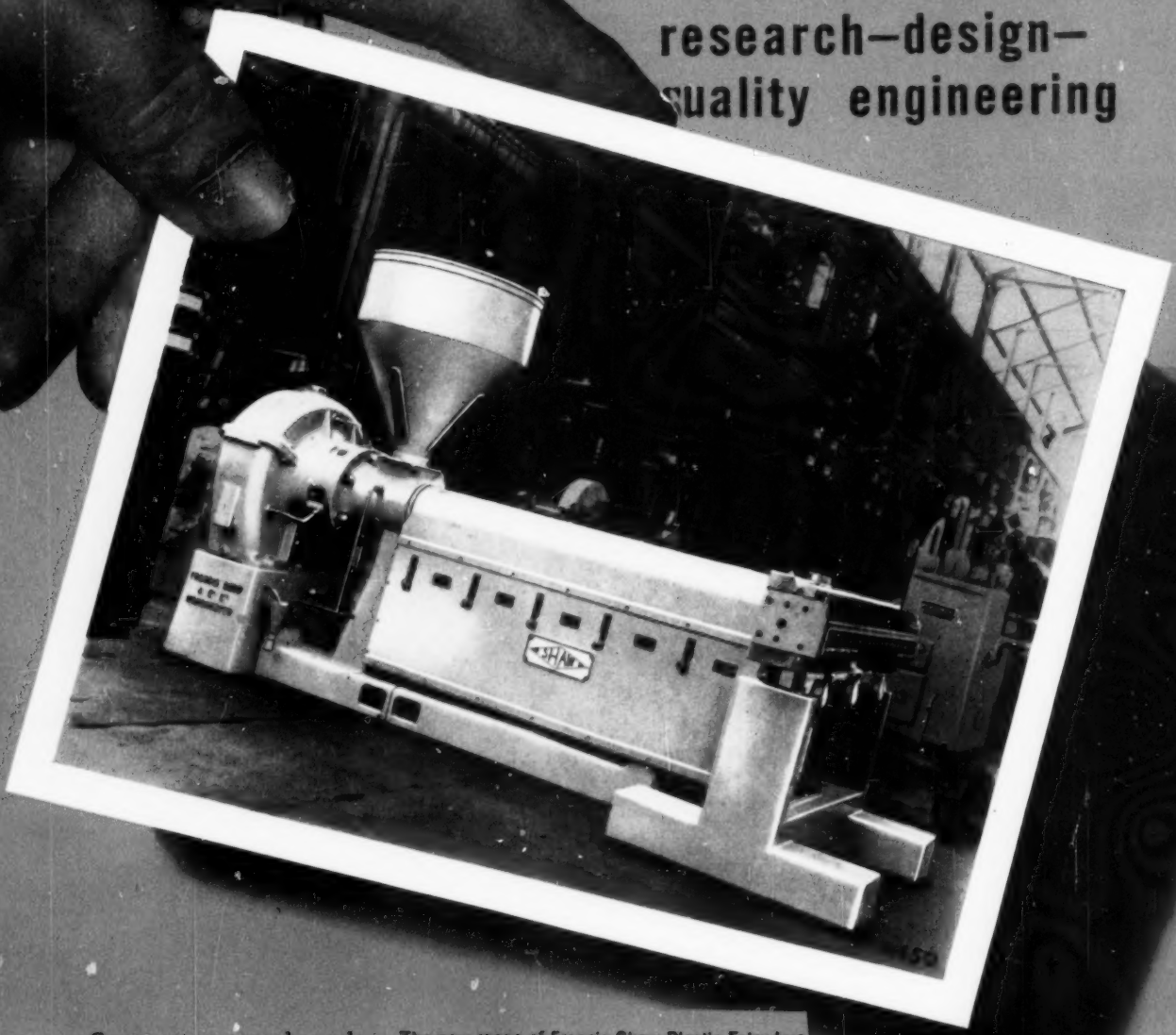

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